

## THE DIFFERENT ASPECTS OF MUSIC THERAPY

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**SUMMARY.** We may not start scientific thinking about an area still in formation that has considerable temporal and spatial expansion, without examining our bases from exact areas. The method sets music as its device, which is the most abstract one among the artistic branches, since its sounding forms “fly away” in space and time. Music tries to induce and modify the psychological processes in the therapy. The following add the background knowledge to this: the domains of musicology, neurophysiology and the musical education.

**Keywords:** music therapy, music education, musicology, music experience, structure of music, neuro-scientific approaches to music

### The Examination of the Definition of Music Therapy

When we examine the definitions of music therapy, it becomes apparent that it is a collective term. *Buzasi* (2007) summarizes it so: music therapy is an intervention with a curative purpose, which happens in a musical medium. We achieve the aim set in the therapy, with interpersonal communication, conscious management of contact factors and with the use of psychological devices. The emphasis is on therapy, which is not the same as musical education, dissemination of knowledge and recreation. Further, in the centre of his definition is the restoration of the balance of the body-soul-psyche, which we achieve with the help of sounds through medical science, psychological and therapeutic procedure.

Furthermore, in *Kollár's* (2007, p.828) study, in which he reveals the role of music therapy in the tumour of the patients' treatment, he quotes the definition worded in 2005 by the American Music Therapy Association, according to which “*music therapy is the application of clinical and musical devices based on experiences within therapeutic frameworks, in order to achieve personalised aims.*” Apart from this, *Konta* (2002) introduces music therapy as a method that can use music and its elements efficiently in the course of the personality development.

So music therapy picks from different specialities for its **methods**. It uses music for the development and restoration of psychological functions and for the support of the personality, to which the framework and the condition

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system are defined by the therapist's profession. It emerges from these definitions that the character of music therapy has a wide spectrum; therefore, it is necessary to introduce the meaning of a word "therapy" itself more directly.

### **The Meaning of the Word Therapy**

*Buzas's* (2003, p.18) writing quotes the most authentic (Duden Etymologie) dictionary used on the German language area: "...*therapy, a term borrowed from the Greek word therapeia, its actual meaning is to respect, to serve and to attend. ...A root word is the Greek therapon: maid, attendant, today is used only in the psychotherapist's compound.*" It refers to the fact that we may talk not about healing exclusively, but actually accompanying, helping and servicing. Therefore curing can refer not only to recovering from illness, but also to being eased of the personal difficulties hindering our everyday lives.

In order to avoid the extremes in scientific thinking, it must be stated that music therapy cannot be a substitute the medicinal treatments. However, *Vértes* (1992, p.1) quotes *Wilms'* thought, according to which certain psychic changes, subjective complaints it may act as a "second track". That is, music therapy is a complementary element of a complex procedure and activity.

After examining the meaning of the word therapy, let us move on to putting it into a system, mapping of the establishment, subject and content of the device, i.e., music from the music therapy point of view.

### **The Objective, Content and Historical Examination of the Music and Putting It into a System**

Singing, playing music became man's culture through magical ceremonies. Following *Thomson* (1975), we regard the magical act as mimetic one. These ancient archaic universal layers are the bases of musicology. According to our opinion, they are integral part of our daily life also. Therefore, we may say that singing and playing music during therapy preserves the mimetic-type of technique, according to which the patient gets an alternative for the drilling of the situations in the external world with the imitating practices happening in the therapeutic surrounding. *Bernát* (1969) sees the explanation of the art in the imitation of the nature, too. He points out that the depiction of life has it increasing and maintaining power. And this is actually the driving force of the aim and the procedure of all therapy.

The viewpoint of musicology can be supported by the words of *József Újfalussy* (1970), according to which singing and knowledge about instruments developed parallel to each other throughout the application of the devices for personal use, while the song with the open sound bought in the today's sense is the product of the new age. According to these, the music used in the therapy takes the ancient-archaic layer as the starting point mostly.

Furthermore, according to *Zofia Lissa* (1973), continuing Ingarden classification, the creation = working coming into existence as the product of the active music therapy is, in fact, belongs to the production-group like the folksong, improvisation etc. So it is different from the opus in the way that it happens once, not typical and does not lift to “human intellectuality” (using György Lukács’s categories in his work), on the other hand it satisfies the therapeutic aim and benefits the creator most. If we accept *József Újfalussy’s* (1970) thinking, the word opus can be regarded not just as temporal, but as a spatial art form of music. That is the characteristics of the sounds have not only frequency = realized in a tone, but have altitude order as well. These characteristics are present in music therapy practice and define the dynamism of the group.

The music in *Hegel’s* (1974) aesthetic system appears in a way that the direct observer depicts the idea in a sensual shape, not through thinking and not in a form of clear spirituality.

That is, music provides an opportunity for individually approaching the person participating in the therapy.

When learning about music we can complement our knowledge with the category of empathy.

With music, the person does not listen to it as an outsider, but he or she is involved in the music. “*The indirect, disembodied and flexible way of the musical objectivity makes it possible to experience the emotional relations directly*”. (*József Újfalussy*, 1970, p. 553).

### **Musical Experience, Understanding and Meaning**

*Mátrai* (1973) considers the psychological definitions as to be followed, for his approach of the concept of the experience. It separates five essential characteristics of the experience. Its directness, the spiritual relation coming into existence in the experience between an object and a subject; furthermore that it is simultaneously active function and passive spiritual state. Apart from this something partial makes contact with the whole in the experience. That is it creates a unit, a harmony for the human psyche.

He points out that the spiritual quality of the relations coming into existence in the experience may be different. *Mérei* (2006) in his work reports on his psychological investigation of taste, from which it can be seen that not just the objective and the personal knowledge, but the conflict between the preliminary expectations and the realization (that is, the semantic conflict) influence the experience. *Gabrielsson* (1995) considers the intensive musical experience a cognitive, perceptual and emotional process, which is traceable in behavioural and psychophysiology changes. An important determining factor can be the situation and the personality, of which the current mental and physical condition may play social contact role in the formation of the experience. *Gabrielsson* (1995) presents Panzarella’s research made in 1980, in which the people examined separate four effects of the experience according to the report

made on the musical and fine art experience. They are the following: regenerative ecstasy, sensomotor ecstasy, retreating ecstasy and thawing-merging ecstasy. Furthermore, according to *Stachó* (2000) the real musical experience in most cases comes into existence as a result of an implicit musical structural analysis and usually a neutral emotion arises if the continuation is unexpected. If the listener does not know, the given musical style the music may mobilize less positive emotions in him. We can read about the psychology of the artistic pleasure in *Vitányi's* work (1969). Although the work induces the experience of catharsis in the process of the reception of the art, the cathartic recognition refers not only to this, but to one's whole life itself.

Stepping towards the neurophysiologic basis of the musical experience some parts of *József Pál Vas's* (2005) work deal with the origin of our musicality, leaning on the results of developmental psychobiology. We may discover that even a foetus has musical skills and musical memory. After the third, fourth month since conception with the help of the developed acoustic apparatus it is capable of the processing of the sounds. Since the foetus takes in 90 % of its sensory stimuli through acoustic modality, it presupposes that this is the most important resource of the brain. It points out that the rich overtones of the deep frequency drumbeats (4-6 cycles/drumbeat) induce temporal lobe - activation (4-6 cycles/theta-rhythm), trance state, visual and acoustic ideas. The essence of the momentum is that these are the physiological parameters of the ancient singing and dancing curative rites. And the essence of the musical experience can be seen in the emotional accord of exterior and interior reality.

After analysing the experience, let us deal with musical understanding and meaning.

According to *Losonczy* (1962), the steps of the understanding of music are built on one another, moving from the simple one towards the more complicated one. He creates two kinds of listeners' behaviour. The one, who perceives, listens to the music and looks only for relaxation and at the same time fills himself up with emotion. The other kind is when the listener's mental activity, concentration and intellectual requirements are needed in order to process the emotions and to achieve the second level. In addition, he separates five degrees of the musical understanding, ranging from the elementary level to the understanding of the structural construction of the music. Continuing this sphere of thought, we manage to reach the levels of understanding created by Bense, which are introduced by *Laczó* (2003). They were the following: the perception of the acoustic surfaces of the music, the grasp of the smaller units of the sounding process, the recognition of musical processes (for example period), the solution of the musical codes (symbols) and the listener's levels of associations and his/her expectations. Going on the circle of the understanding and meaning, *Laczó* (2006) reviews Judit Csillagné Gál's candidate dissertation with the title "*The psychological investigation of orienting in the compositions*". The most determining question of the investigation was, whether the meaning

of an artwork can be approachable. The author's conclusion is that the reception of the artwork mobilizes the whole psyche. Since the intellectual and emotional effect prevails simultaneously, the investigation can be done simultaneously only, and both are necessary to the solution of the meaning of the artwork. *Stachó* (2005) reviews Jaakko Erkkilä's, a Finnish therapist theory of music, who indicates four sources in the musical meaning: vital effect (meanings born with us), psycho-dynamical (meaning based on unique associations of ideas), cognitive (meanings following from the solution of the construction of music) and the cultural level. We may read in *Walker's* (2004) and *Jan's* (2000) analytical studies about the meanings developed culturally and about their spread.

*Echo's* (1976) work presents the psychological explanation of the musical emotion. According to him, musical thinking is the most suitable for the structural analysis of the measurable and concrete happening in the terms of relations, since the rhythm has his own mathematical expression (sound with the help of frequencies), the harmony relations have their own quantity. However, when discussing the interrogations being aimed at the nature of the music we may not avoid reference to the world of those emotions that the music itself awakens in the listener, and which are produced in the strain of the expected and received sound. According to *Hartmann* (1977) the composition has articulated coherency objectively, in which every detail refers ahead and back, and these references themselves are caught together with the one which can be heard lecherously. That is, the composition forces the listener to listen forward and back, and to wait for the moments that come next in every second. In addition, he distinguishes 3 layers of musical background, which are created by sounds. It is when the listener vibrates together with the music, when it touches the listener's soul deeply, and finally the metaphysical layer, which expresses itself mostly in religious music. Hartmann talks about music as an artistic material, the product of which does not exist as a thing, a body, but as a process, dissolving in the temporal flow and movement. This is the reason why music is able to bring out the secrets of the soul without real topics.

Consequently, we may draw the conclusion from the contact of experience and understanding that the more musical layers we reveal, the richer our range of emotions will be.

After these points, let us examine what experiments and methods were born on the area of musical "aptitude".

### **Musical Skills, Abilities and Musical Taste**

*Révész* (1946) discusses the ideal manifestations of musicality. He is the person who first did research in order to diagnose the measure of the musicality. His examination methods incorporate eight different characteristics indicating acoustic - musical ability. For example, sense of rhythm, playing and creative fantasy after listening to the music. *Varró's* (2002) study is about the arguments of musical talent and its examination. As the fundamental

criterion of musical talent, he mentions the existence of the musical skills, abilities and the existence of the auditory imagination. When examining musicality, he means the specific aptitude and he does not want to give numerical value to the talent, emotions and to the inner motivation. He prefers the direct observation of the man.

The measurement of musical taste and empathic ability is important for the music therapist. *Dombiné's* (1992) work presents the newest standard tests on examining ability. These tests are suitable for the measurement of the foresaid ones: Hevner-type ("Oregon") test on musical taste, Schoen-type musical taste and understanding test and Kyme-type aesthetic judgement test. The tasks form three types: comparison, aesthetic judgement and improvisation. In *Dombiné's* (1999) writing, we can find additional experiments on musical ability.

Continuing the domain of the musical taste, *Behne* (1994) in his study separates the influencing factors of musical taste and preferences: age, sex, social status, personality and the situated musical preferences (the role of current mood). In addition, he defines different dimensions, like the listener typology. He also demonstrates that the increasing orientation outward - in point of the musical taste - can be seen at the puberty age the latest, naturally towards the ones with the similar age. If by the end of the puberty the "Ego"- identity developed, we have to aspire to let the musical preference fulfil the individual taste and to reflect the unique personality. *Stacho* (2005) points out that music and the method used in the therapy can be assigned after examining the musical prerequisites.

These pieces of knowledge are in the therapist's background knowledge. They help to circumscribe the suitable musical style, to define the method and to have an intuition of the patient's manifest problem.

### **The Story of Music Therapy**

*Buzasi* (2007) describes the story of music therapy. He presents the expedient application of music through the history of humankind embedded in a process. His references from the biblical Old Testament, the Chinese and ancient Greeks' curing ideas allude to the pre-scientific age. The principles and effects laid down at this time exist in the time of the science as well. The beginning of it starts with Dalcroze's, Pontvik's and Porta's activity and with the foundation of the International Music Therapy Association in 1950. These well known names appeared from the middle of the previous century: Alvin, Lecourt, Schwabe, Benenzon, Wilms and Galinska. The first full-time training course started in Heidelberg in 1980. *Konta* (2002) starts his presentation of the development of music therapy and its development with biblical reference. Then he says that applying the music in curing remained as the part of the medical science until the Middle Ages. It was the age of the reformation when the education of the music made progress primarily. Furthermore, we get an

overall picture from Peter Lichtental's and Tadeusz Natason's activity, and from the Carl Orff method. In Hungary music therapy spread primarily in the area of internal medicine, psychiatry and became the part of the personality development in 1970. Apart from this, we may recognise the effect of music therapy on the personality, and music therapy tools (human sounds, body sounds and musical instruments).

We can read about the forms of music therapy (individual and collective, active and receptive) and its methods (behaviour and conflict centralized) in *Buzasi's* (2007) writings.

*Vértes's* study (1992) gives detailed information about Péter Lichtenthal's activity, who was a doctor and composer in Italy and about Professor Tadeusz Natason. He was the first person in the world who organized music therapy department at the Musical Academy in Wroclaw and who created the international series of music therapy congresses. We may read in his historical overview about the doctors who started researching the scientific conditions of the curative use of the music, for example Albert Schweitzer, Theodor Billroth, Dogiet and Harrer. This process began in the middle of the 19<sup>th</sup> century.

Finally, *Beimert's* (1985) work shows over the story of the essence of music therapy through the Holy Fathers in the Old Testament, through the Greeks until the twentieth century. Benenzon's study quoted by Beimert defines the effect of the music on the subject as a magical and suggestive strength.

So with the help of these historical writings it can be seen that the mode of action of music therapy and its practice are of the same age as the mankind. Throughout its development, going through the historical ages, its methods and instrument system conquered more and more areas (curing, upbringing, educating the people, holidays, social practice etc.) Even though, it kept its secondary features all the time. It is also important that *Thaut* (2005) present the change in the paradigm in the description of his experiment, in which the theory of music therapy and its clinical practice shifts from the social model being built on the general welfare concept towards a model being based on cerebral function and musical perception controlled by the neuro science.

Since the story of evolution of music therapy goes tightly hand in hand with the story of music, we present the musicological sphere of thought taken from *Vági Istvánné's* (1976) writing, which is about the physiological origin of singing and playing music. The most ancient form of song, the so-called animal sounds preceded the speech. Even prehistoric man had the ability of perception in spite of the fact that his cerebral cortex and nervous system were not so developed as to be able to express his thoughts into speech. The song kept its contact with the strengths of entity and beyond the communication of the thoughts, it may appear as the mediator of the emotions. As man's range of emotions became complicated, it made the song manifold. This is when love heroically laments, natural and ritual songs appeared.

Now, I would like to talk about the situation of today's complex art therapy.

### **The current situation of art therapy**

We can read about the application methods and techniques of art therapy in two Japanese studies (*Ijuin*, 2005 and *Tokuda*, 2005). In Japan, art therapy has a medical background and it is used as a tool of prevention and counselling. It can be used in curative talks and on séances as an attribute device and it is the technique of the therapy at the same time. *Ijuin* (2005) shows the techniques in use and presents the successful application of art therapy through a patient suffering from neurotic, and another one with anorexia nervosa in the form of case studies. Continuing the examination of today's situation, *Antalfai* (2007) outlines the method and aim of art-psychotherapy based on cathartic experience. He emphasizes that work has a dominant role in the conservation of the health and it is also a creative form of self-expression in the cognition of healthy personality. It is important to know, as today there is more information about pathological personalities than about healthy ones.

Furthermore, in the study by *Martin, Pórszász* and *Tényi* (1991) we can read about the formation and the functioning of inductive and receptive music therapy made on psychotic patients at the open psychosis department in Pécs. We receive a detailed picture of the construction of the multilevel group psychotherapy system. The features of the method, the results and the application of the Galinska-method used at the department are also presented. References can be found that Alvin, with autistic children, Schwabe with neurotics and with people having functional disturbances and Wilms with psychotics successfully used music in their therapy. *Lecourt* (1976) indicates in his work that *Jacquet Jost* also applied individual prescriptive therapy. According to him, the hardest problem is to select suitable music for the patient's problem. He aimed to widen the scale of the music used to all musical trends. His method looks like this. He made the patient listen to three short pieces of music. The first one was to identify the state of mind, the second one to evoke natural scenery and with the third one he wanted to take steps in the direction of the development. We may read about Helen Bonny's GIM (guided imagery and music) technique of imagination directed with music in the work by *Bíróné* (2009). This technique builds upon the fact that music, as a mediatory medium, induces spiritual processes, which can be expressed in a word, a picture and in feelings. The way this technique was applied at the Psychiatric Clinic in Dunaújváros is described clearly.

After describing the historical, situation-revealing writings, let us map the guidelines and predecessors who laid the foundations for the practice internationally.

### **Well Known Music Therapist Predecessors and Models**

*Wagner* (2006) outlines the following music therapy models. The starting point of the model groups is that in them sound acts as the product of musical expression. The psychoanalytic – psycho - dynamic theory is mentioned first,

which is based on Freud's, Winnicott's, Klein's, Fiorini's and Stern's principles and it culminates in Benenzon's, who was a music therapist – neurologist, model valid even today. Its essence is that he considers music as a non-verbal interaction, in which the sound - noise and the whole music act as a language. Juliette Alvin and Tony Wigram are also considerable representatives of this theory. In the centre of their model the sound – noise and the whole music as a language have direct influence on the emotions.

Leaving psychoanalytic-psychodynamic theory for a while, after the first two models we should talk about the creative model. Based on the principles of anthroposophical and humanistic psychology (Rudolf Steiner, Abraham Maslow) Nordoff and Robbins developed their model, in the centre of which stands the therapeutic effect of musical experiences. That is how they created the creative music therapy model.

Now we return to psychoanalytic-psychodynamic theory, which was approached by Mary Priestley, Winnicott and Klein who followed the footsteps of Jung. In his model he had used music and imagination. In Helen Bonny's model, the whole music has a direct influence on emotions and imagination.

The model that presents the whole music (rhythm, melody, harmony) itself as a mirror of the development of intelligence is based on Piaget's activity. Finally, he mentions the cognitive psychological model, which uses musical experience as a neuropsychological diagnosis, forecast and therapy. David Aldridge and Cherly Dileo are the newest ones who are applying this model.

We may separate two theories according to the models discussed so far. These are the psychoanalytical and psycho dynamical, and the one with a creative basis and with the predominance of the psychoanalytical one. In these models, everybody placed the whole music into focus according to his or her practice with the help of the theories mentioned above.

In spite of the fact that the musical elements are applied diversely and according to profession, therapists keep following one trend.

*Kőszegi Tamás's* (2006, p. 8.) work quotes the principle accepted at the Music Therapy Congress in Hamburg, in 1996. According to this *"the aim of music therapy is to map the opportunities of the individual and/or to restore his or her injured functions; thus it makes a better intra- and inter-personal integration possible, and the patient may live a better quality life as the result of prevention, rehabilitation or treatment"*.

Let us continue dealing with the **well-known therapists** in order to receive a fuller picture about them.

We can read about Juliette Alvin's activity, her method and its application in the following works (**Alvin**, J. 1978, Haneishi, E. 2005; *Kőszegi Tamásné*, 2006). She was the first in the world who dealt with music therapy of autistic people. According to her, music may induce unconscious reactions. The basis of her experiments and therapy is to let attention **evolve** from hearing.

The Argentinian neurologist, Rolando Benenzon, and Gabriella Wagner, with Hungarian ancestry, apply sounds heard during the time of pregnancy in their music therapy in order to achieve regression. With this they put an end to the pathological state and let the child enter on the road of recovery. Three phases are separated: regression - in which the IZO principle is important, according to which the therapist is the mirror of the child's behaviour, communication and the phase of the integration. Fixed musical instruments and different sounds of the water are used. (Wagner, 2006; Kőszegi Tamás, 2006).

The therapy and the results of Alfred Tomatis, the French otorhinolaryngologist are outlined by Kőszegi Tamásné (2006), Corbett, BA., Schikman, K., Ferrer, E. (2008) and Gerritsen, J. (2008). Tomatis thought that the main function of the ear was to help cerebral development before birth. The starting point of his theory is that high sound waves charge a person's energy and lower ones deplete it. The special "Tomatis ear" (special earphones), with the help of which he exercised the muscles of the ear by mediating modified sounds, is named after him. His other achievement is when he puts the mother and her child into a "water-tub" and transmits such sounds (from Mozart's music), which may have been audible in the third month of the foetus. The therapy was continued until the level of a nine-month embryonic hearing, when the father was actively involved in the process, and with his collaboration the child's "hearing was reborn". Trained Tomatis sound-therapists have had significant results in 250 places around the world. However, Corbett, BA. Schikman, K. and Ferrer, E. (2008) reported on the deficiency of Tomatis therapy done with autistic people in the area of lingual development. But Gerritsen, J. (2008) – a Tomatis researcher – denied it in his answer, presenting supervised statistical data as a proof.

We can get to know the story and the bases of the method of Robbins' and Nordoff's activity, who were American musicians and teachers for backward children from the following works. (Youngshi, 2004; Kőszegi Tamásné, 2006; Wagner, 2006). They tried to visualize the contents of the experience that children actually brought with themselves with the help of improvisation. The bases of their method, enriched with deep psychology aspects and which were laid down in the Sunfield Children's Home, emphasizes that the therapist's and the client's interaction must be placed in the centre to increase efficiency.

According to Gertrud Orff's basic concept, if when one of the perception areas fails, the use of another area is increased, then the disturbances of the injured function decrease. She uses different approaches (sound, rhythm, melody, speech, movement) with the child in the course of the therapy. Her aim is the development in differentiation, association, sensitivity and in the whole activity itself. (Orff, G. 1994; Kőszegi Tamásné, 2006).

Karin Schumacher's concept is that the child hears what he or she does. In the first phase of the therapeutic contact, there is a contact not between the two persons, but between the rhythm and the child. She drew up an assessment system for development. (Schumacher, 1996; Kőszegi Tamásné, 2006).

Kokas Klára was a music teacher. The therapeutic application of music appears in her concept first in Hungary. The basis of her method is to inspire sensitivity leading to music, that music is born from movements, and it inspires movement. (*Kokas Klára, 1992; Kőszegi Tamásné, 2006*).

In the work by *Buzasi (2006)* we may read about the following music therapists: Julius Knierim, music therapist and educator for backward children, Johannes Th. Eschen, the deputy manager of the Musical Academy in Hamburg, Norbert Linke the leader of the research work "Herdecke Projekt", and Gertrud Loos, who is a music therapist, psychodynamic kinesiotherapist and the founder president of the music therapists' association. The list of creators mentioned in our present exploration required, is not yet completed, additional research work is needed.

Let us continue our examination by mapping the neurological effect of music and the results of therapeutic researches.

### **The Results of Neurological Researches Related to Music**

We can read about the phenomenon of cerebral plasticity, which is usage dependent, in the following study. (*Münste, Altenmüller and Jancke, 2002*). It was found that the areas in the brain, which play a role in musical data processing, are also involved in other tasks, for example, in reminiscent and linguistic functions. It is demonstrable that playing music regularly increases the reliability of data processing and it influences other areas, too. The motor, auditory and visual cortex is better in musicians and this phenomenon is called cerebral plasticity, which is usage dependent.

*Koelsch* and his colleagues (2000) examined the event-based cerebral ability (ERP), which is brought to light by the cognitive musical processes. Four experiments were conducted, in which "non-musicals" listened to musical chord sequences that sometimes implied a chord, which conflicted with the listener's sound expectations. Deviation in the brain waves is shown according to whether or not the chords fitted into the tune. Thus, chords not fitting into the tune induce cerebral reactions independently from musicality. The hypothesis that the human brain has implicit musical ability is proved by those results.

In the experiment by *Kovács* and his colleagues (1993) they proved the hypothesis that the content and the quality of experiences arising from music can be modified in the state of hypnotic trance. Measuring with a semantics differential scale, a significant change was found in the dimension of stress comparing the difference between alert and trance state, between the experiences caused by music.

Based on the presentation by *Herkenrath (2005)*, music therapy approaches contribute to the fact that comatose patients can find the way back to their self-awareness.

*Janka* (2009) believes that more cerebrum and cerebellum areas are involved in the course of musical processing. These cerebral regions are typically such fields that show functional activity, for example, when there is perception, cognition, thinking, emotion and movement. Although there is no musical centre, it can be said that in terms of musical processing, some cerebral areas are more often used. They are the frontal areas (harmony, tone), parietal lobe (rhythm), upper temple regions and the limbic system with the predominance of the right hemisphere. Thus the understanding of musical processing with the help of the nerve science (thanks for the imagery procedures of the nervous system), gives an opportunity to understand better how the human brain perceives, creates music and how it responds to music on the emotional, behavioural and thinking level.

The results of cognitive nerve science research showed that compared with the minor tone, the major tone reduces the stressful effect of the state and they emphasised that it moves away from intellectual lethargy. Furthermore, the stress reduction achieved with music is connected to the processing of feelings of happiness and grief. This conclusion can be drawn from the characteristic asymmetric outlook of the stress answers in the upper temple cerebral cortex. (*Suda* and his colleagues, 2008).

The empirical results of the effect of the music on regions of the brain provide important information for a music therapist. Accordingly, music as a supplement to medicinal treatments helps to make the patient emotionally accessible for the therapy, which is the condition of the procedure.

In the next part, we will deal with music therapy experiments, the investigations done with therapists and the methods which are to be used.

### **Music Therapy Experiments**

In the study written by *Buzasi* (2003) we can read about the method and the development of Intertherapy. Mary Priestley guided the research work, as the result of which Intertherapy became a subject in the training of music therapists. It was formed during the supervision among colleagues and it aims to let the therapist become closer to emotional responses which the patient experiences during the occasion of the exploration. As a supervision procedure it helps therapists in the exploration of their own blind spots.

Since it is the improvisation by the instrument, which stands in the centre of Intertherapy and active music therapy, the overview of a survey by *Phan Quoc* (2007), which recorded the emotional characteristics appearing in the musical improvisations with the help of already existing scales and new ones and with new devices is very important.

The recognition of the symbol appearing in improvisation by instruments and in leading, the patient to interpret this throughout his or her own life story is in the centre of a therapist's work. Valuable results are shown in the examination revealing emotional communicativeness by the music therapists *Gilboa*, *Bodner*

and *Amir* (2006). They drew the conclusion that music therapists defined semantic contents carried by musical improvisation more precisely, than the ones, who were not experts. But, it is not yet defined to what extent the therapists' emotional and vocational preparedness play a role in it.

Since the therapy changes and it is created according to the therapist–patient relationship, and it develops throughout the dynamics of the emotions, the study of *Ekman* (1999) is important, which affirms that emotional expressions have a determining role in the development and regulation of interpersonal relations. Humans are able to express their feelings with feature or sound imitation consciously or habitually that can happen in order to mislead others or to elude an emotion not expressed.

It can be stated that non-verbal emotional marks of perception and interpretation have a key role in the therapeutic process. In the training process of therapists, they have to be prepared for separating the patient's and his or her own emotions. That is they have to learn how to deal with the mechanism of projection, transmission and vice versa transmission.

Continuing the examination with therapists, a study can be highlighted, which presents the investigation of the therapists' spiritual ability. This is a significant part of the area for the work of those therapists, who work with dying people (*Sutter and Wormit*, 2007). The most valuable statement after all is that spirituality can be taken into the process of therapy difficultly.

Now let's review the results of the music therapy experiments and investigations in **geriatrics and hospice** that are the most important areas of therapy.

The study by *Clements-Cortes* (2004) presents the role of music therapy in geriatrics that focuses on health care of the elderly. He believed that music fulfils a central function in exchanging of emotions and with it a more relaxed and more comfortable state can be reached. It reduced the symptoms of depression and social isolation; furthermore the communication and the ability of self-expression were growing. Apart from this, they emphasize the overview of memories and the whole life, in which music therapy plays an important role. *Vértes* (1995) presents the investigation that focused on the manifestations of the ageing process (psychological, physiological) of professional performers. They were seeking to answer whether intellectual and physiological loading of instrumental play hurries ageing in their case. The gerontological application of music therapy made the experiment of the question justified. The result of the experiment is that the extraordinary visual, auditory, concentration and cognitive activity means a lot of training. That is, playing a musical instrument regularly preserves the intellectual-physical state longer. In an earlier writing by *Vértes* (1992) we can read about the results of the experiment carried out at the sanatorium in Visegrád. These results showed that adequate collective music therapy has a relaxing and dissolving effect in case of psychosomatic, neurotic patients and in case of patients suffering from old-age reactive

depression. Besides curing, the experience indicates that the therapy has sense of taste and ability developing effect.

We continue our investigation in the **territory of hospice**.

We can read about the role of music therapy played in sleep disorders in the following study (*Harmat, 2009*). Sedative music modified the quality of the participants' sleep in a positive direction that was demonstrated with sleep tests. He did not manage to support this effect with sleep-physiology experiments. So the author calls attention to the methodological problems and difficulties at the time of measuring the effect of music therapy applied to sleep disorders.

*János Kollár (2006)* writes about music therapy treatment used with patients suffering from Alzheimer's disease. Summarizing the effect of music therapy used as an additional device of the treatment with this group of patients, he tells the following. The ratio of straying decreased, memory retention was improved or just a smaller deterioration was seen (compared to the earlier state), social interaction grew and with it isolation decreased. When treating tumourous patients music therapy contributes to the improvement of the mood state, to the quality of life, and it makes feelings more easily expressed. (*Kollár, 2007*).

Of course, additional experiments are going on about sleep disorder, and the correction of measurement procedures is under way also. Apart from this as the outcome of our three-year clinical practice, where we are dealing with schizophrenic patients, we can report on the successful application of active music therapy. Quantifiability is at the centre of our attention.

We can not go past those analytical studies, which collected the writings about the effects of the experiments, which used music therapy with depressed patients (*Maratos and his colleagues, 2008*), people living in hospice (*Bradt and Dileo, 2010*) and with schizophrenic patients (*Gold and his colleagues, 2005*). Presenting the repeated processing of data, the attention is called for the experiment of the effect of music therapy, its measurement problems and deficiencies. Additional measurements, experiment data are made necessary to show unambiguous results and effects.

We can read music therapy case studies and the evaluation of data in *Astrid Lorzt's* study (1984). She summarizes the case studies that have appeared so far in the *Musiktherapeutische Umschau*. We can read about the therapeutic trends and forms used and about their efficiency according to the groups of illnesses.

Finally, *Buzasi (2003)*, who after processing statistical data determines them as, describes the mechanisms of music therapy: lessening of tension and psychic resistances, exploring the road leading to emotions, dissolving emotional inhibitions, developing experience abilities and active, independent initiations and making subconscious processes conscious. *Bagdi Emőke (2005)* gives an adequate answer to the nature of the way music therapy has its effect. With the help of the transformational potential of music, the sounds

and the rhythm help to display and relive the emotional contents. These contents are corrected and newly experienced and they go through experimental reshaping.

Since music therapy is part of musical upbringing, we end our discussion with this topic.

### **Musical Upbringing**

Musical upbringing and pre-school age activities help in the preparation of efficiently forming reading and writing skills. It plays a big role in preventing the development of problems deriving from the skills mentioned above, and it also has salutary effect on other areas like cognition and cognitive skills (*Bolduc*, 2008). So from the study we get empirical evidence for the phenomenon of musical transfer. When talking about musical upbringing *Mariann Ábrahám* (2003) calls attention to the development of hearing emphasized even by Couperin, C. P. E. Bach, and Türk. Furthermore, Wieck's and Schumann's fundamental idea about musical educational is the training of hearing. Riemann directly marks the analysis of the quality of the hearing as a research area. Breithaupt examined the function of nervous system, the structured function of which is the fundamental condition of a good performance.

So the ability to hear well is the measure of musicality, which is, at the same time, the road leading to good musical taste.

*Mariann Ábrahám* quotes *Margit Varró's* lecture held in Paris (2003, p. 9.) like this: *"Personally, I was driven by the power of overcoming bad experiences from my childhood and teenage ages: I was educated very badly, superficially and scantily even in technical fields. This is exactly what helped me to give to my pupils what was not given to me. Therefore, in my pedagogic program I try to widen the framework of teaching and include certain spiritual and intellectual factors, which are often left out or even neglected, as we know it."* According to *Mariann Teöke* (1999), the experience-like music learning must make an effort to form people holistically.

Considering and developing body-soul and intellectual factors, we can reach useful musical procedures.

We can read about *Émile Jacques Dalcroze's* method in the following studies (*Szőnyi*, 1988; *Piers*, 2010, a). The main thought of his method is to teach unlimited hearing, rhythm and motion experience ability and to provide as many opportunities as possible. His technique is called eurhythmics, which is the transformation of the music into movements. The body is a device for musical expression. The child observes and understands the music he hears and expresses it with movements. First, the child imitates and later gives back the music independently. Finally, he aims to express himself through individual movements. The instinctive understanding is followed by the analysis of musical and movement experiences.

Szőnyi, 1988 and Howe, 2010, present Maurice Martenot's method. Martenot's principle is not to separate the branches of the artistic upbringing, but we join it to the individual's global development. He also sets out from the rhythm and takes the tribal music as a starting point. Without pausing, the children express everything with movements. Music is like a sounding movement that students depict in drawing. He considers free improvisation important. Games like dominoes and rhythm lottery are used to teach the theory.

Maria Montessori's principles, her concepts about upbringing in general and musical upbringing is outlined in the studies by Szőnyi, 1988; Erika Kiss and Miklósné Szirt 1992; Vera Méhes 1997; Pukánszky and Német, 1999. The most important is the development of the perception, the child's freedom and to make sure that he is involved in the activity. To develop musical skills she used a self-made tree cylinder, bell, dulcimer, monochord etc. She paid attention to the fertile use of silence and trained her pupils not just to use and understand it, but she taught them to enter fully into the spirit. She aimed to make her pupils reflect on the music, divided into categories first spontaneously, then with moves and with corrected movements and finally with special dance steps.

Edgar Williams aims to develop the child's abilities and to help his personality to become balanced. He emphasized the role of playing music together that creates good spirit of community, where he wanted the child to be involved actively. First, the child improvises (sings, dances), later he learns to appreciate and listen to the music while playing a musical instrument. This is how his musical consciousness and culture evolve. There are social aims in his teaching method, too. (Szőnyi, 1988).

Shields' experiment laid the foundations of Justine Bayard Ward's method, which states that music contributes to the child's intellectual development. His aim is to let music turn into a language that is a device of spontaneous self-expression. He uses Gregorian musical basis for development.

The following writings give evidence about Shinichi Suzuki's educational concept. (Szőnyi, 1988; Piers, 2010, b). He puts people's primary school training above everything else. His main aim is forming of the child's character with the devices of music learning. His starting point is the right to talent, which depends on whether we develop it, or not. He considers the constant development of the memory and our skill of acting essential. Furthermore, the development of social skills, the usage of cooperation and group work also belong to his concept.

Szőnyi's (1988) and Fassone's (2010) writings give information about Carl Orff's activity. Orff's starting point is the usage of rhythmical improvisation, children songs and games. The unity of speech and dance is important for him. Sometimes the participants in music use their own bodies as a device. Beside the "body musical instruments", we can put emphasis on the well-known Orff's instruments.

On the way of examining the “new” musical methods we can not leave out those musical educators forgotten for a long time, whose statements broaden the picture formed about musical upbringing and help to find a bridge to the use of music as a therapy. *Gézáné Laczkó* (1937) demonstrates the spirit of Duret, who taught not merely to play the piano, but to approach the absolute beauty through perfect technical treatment of the piano. He was able to be his pupils' adviser, spiritual clinician and could help in everyday troubles. *Anna Parcssetich* (1937) summarizes the practical realisation of the ideal in art. The task of pedagogy melds the technique with the conception and musical empathy. To plant the ability of empathy in our pupils' souls is the largest task of artistic teaching. *Földessyné* (1937) presents the task of musical upbringing through the methodological questions of piano teaching. The child's movement style, which is tightly connected to his spirituality and the thorough knowledge of the child's human type, is very important. With the help of these the multi-faceted development of the person's individuality is made possible. *Földessyné* believes that the largest pedagogic challenge is to dissolve obstacles that strain between man's emotional atmosphere and the passions shown for the outside world. Apart from this, we have to emphasize the Kovács method, which gives a new approach to music pedagogy. His lifestyle program, gymnastic exercises founded on musical thinking, prepares the prevention of vocational harms and treatment. Because of its preventive character and that he places the teacher-student relationship into a new dimension; this method is midway between therapy and pedagogy. We can get more information about this in the study by *Zsuzsa Pásztor* (2007).

Now we examine the **relationship between therapy and pedagogy**. *Lindenbergné* (2005) highlights that pedagogy and therapy is parts of the duty, which is helping in the development of personality. The recreational activities with a preventive purpose give opportunity for the teacher to decide about his methods freely. So in leisure time activities the teacher can use the practice of individual, collective and complex music therapy, while he is doing his work within school frameworks. *Telek* (2006) separates the practice of therapy and upbringing. Musical upbringing and the method of music therapy are not separable. While there are some correcting effects in upbringing, the therapy is also rich in pedagogic elements. Their common aims are helping prevention, improvement and optimal development, strengthening the integration of personality, socialisation and the mobilization of creative strengths. Therapy is a shorter process in time and participation is voluntary, while participation in education, which is a long process in time is obligatory, where performance is evaluated, which is in the centre of it, and the acquisition of information is the main aim. In therapy performance and classification are not in focus, but the process is paramount. So they have common elements, but we can talk about two different activities concerning aim and task. *Telek* (2006, p. 1.) quotes *Missura's* (music therapy lectures 3) words from 1996: “*the therapists work mostly to accompany, service, mediate, but not to control or give instructions...music*”

*is a device inside music therapy, an aim inside musical upbringing..., while the one is a process, the other one is a product... the therapists and the educators use the same elements, devices with different aims...if a therapist from some kind of reason does a tutorial work rather than a therapist one, he may allow himself to designate what he does and to choose an other name instead of music therapy...this way the therapist may avoid representing things, which he does not do and with this to refute the expression music therapy”.*

Finally, I give a brief summary on the positive things founded in musical upbringing, which is in Kodály's concept also and that is written down in the study by *Erősné* (2003). Music forms personality and has an educative effect on the community. Apart from this, it offers an ethical earnestness and sense of responsibility. The importance of musical experience is emphasized, which can be reached with the help of music learning that shapes good taste from childhood.

**To sum up**, we can say that the practice of music therapy and its modes of action are of the same age as humanity. It has spread throughout history in an increasingly wider and wider circle, however, it has still kept its supplementary position. The scientific conditions of its application and frameworks were started in the mid 19<sup>th</sup> century as a remedy, and then continued in the area of upbringing.

The music therapist works with the elements of music teaching, with its practice, but uses other systems of purpose, framework and conditions. The therapist has musicological background knowledge, with the help of which he circumscribes the musical direction used in the therapy, and builds up the method.

Due to the effect of the music on areas of the brain, music (its effect and power) is as important in medical treatment as the place where therapy takes place because the method, the length of time, the background knowledge is determined by the place itself. That is, it makes the patient accessible emotionally. That is, it makes the patient accessible emotionally. The experimental results show that music therapy has a supplementary effect and it cannot be valued independently. When measuring it is essential to form scientific experimental conditions and to name the activity in which we wish to enforce the music therapy.

We may call attention to the fact that the German expression “musik und therapie” expresses the essence of the process in a better way than the English “music therapy” since the music and the experience-induction generated by the music is first, and then comes the therapy. That is, we serve, nurse, respect, help and heal the person turning to us. We do this inside the framework of our own profession, and we know that the preventive nature of music on the named areas is experientially and empirically proven. Music has the opportunity to be used in such a way because everybody can feel its effect uniformly from ancient and archaic times. Perhaps, meditating on this thought Kodály said, “*Let music belong to everyone!*”

(Translated from Hungarian by Bekei Judit)

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