MUSIC AS A CAUSE OF DISEASE AND

AS A HEALING AGENT

By

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This study was first published in September, 1933, in the International Review of the Educative Cinema, which was issued by the International Institute of Educative Cinema, a branch of the Society of Nations. It was revised and enlarged in 1956. In 1958 the author became acquainted with the Music Research Foundation of New York, and was very pleased to find a great similarity of attitude and aims in the endeavour to investigate and apply the power of music in restoring physical and psychological health.

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The healing properties of music were well known to the peoples of the past and they made considerable use of it. Among primitive peoples songs and musical instruments such as the drum and the rattle were used not only in order to increase the effect of herbs or drugs, but also as independent means of healing. Such practices have persisted until the present among American Indians. Paul Radin, in his essay on "Music and Medicine Among Primitive Peoples," reports that "among the Ojibwa, for example, the so-called jessakid practitioners are supposed to function simply by sitting near the patient and singing songs to the accompaniment of their gourd rattles. Similarly, among the Winnebago, those who have obtained their powers from the bear spirits can heal wounds by merely singing their songs." (Published in Music and Medicine, Schumann, New York, 1948)

It was known by the ancient civilisations that music has healing properties, and they deliberately used it for such purpose. In Finland's epic poem, the Kalevala, we read of a sage who succeeded, by means of his music, not only in appeasing the fury of a mob, but actually in hypnotising the people, sending them to sleep. In the Bible it is reported that King Saul, being tormented by an evil spirit, called upon David, the skillful player on the harp; and "whenever the evil spirit was upon Saul, David took the lyre and played it with his hand; so Saul was refreshed, and was well, and the evil spirit departed from him." (I.Sam., 16:23). According to the Arabs, music has a beneficent effect on animals. They say that the singing and playing of the shepherds make the flocks thrive.

Among the Greeks music had a special place as a curative agent. Homer narrates that the flow of blood from the wound of Ulysses was staunched by the melodious song of Autolycus.

We have more precise information on the use which Pythagoras made of music. "Pythagoras," writes Porphyry, "based musical education in the first place on certain melodies and rhythms which exercised a healing, purifying influence on human actions and passions, restoring the pristine harmony of the soul's faculties. He applied the same means to the curing of diseases of both body and mind....In the evening, when his disciples were about to retire, he would set them free from all disturbances and agitations of the day, steadying their somewhat wavering minds and inducing peaceful sleep which brought with it propitious and even prophetic dreams. And when they arose in the morning he freed them from lingering sleepiness by means of special songs and melodies." Porphyry also relates that on one occasion, after Pythagoras had striven in vain to calm and restrain a drunken man who was attempting, as an act of revenge, to set fire to a house, he succeeded in pacifying him by means of music.

Plato accorded just as much importance to music as a powerful means of psychotherapy and education, as is shown by the following statement (among many others) to be found in his "Republic": "Rhythm and harmony enter into the inmost core of the soul and fasten most powerfully upon it, imparting order to it and making its possessor an harmonious person."

Aristotle mentions among the various functions of music that of emotional catharsis, which shows an interesting similarity with the aim pursued by modern psychoanalysis.

We cannot deal with many other instances of the appreciation and use of
music for healing purposes by the Greeks and the Romans and, later, from the Renaissance on through the eighteenth century. Those interested in the history of musical therapy can find ample information in two essays, one by Bruno Meinecke, and the other by Armen Carapetyan, contained in the above mentioned book.

In the nineteenth century, owing to the prevailing materialistic trend, this method of psychotherapy has been comparatively neglected. One may even say that the tonic effect of music has been more appreciated by the military than by the medical profession. Every regiment has its own band and constant use is made of martial music, of spirited marches to raise and keep up the morale of the soldiers. Many soldiers not only like singing but have become conscious of the wholesome effect of sound. One of the songs which often resounded in the trenches during the first world war may be rendered as follows:

"Sing, boys, sing
To keep the wolf at bay.
All listlessness and sadness
With song we'll chase away."

A few medical doctors, however, have made use of musical therapy. Among them was Dr. Chomet. In his book, The Influence of Music on Health and Life (published in 1870), various cases of healing by means of music are mentioned. He reports the case of a woman subject to epileptic fits who one day happened to be listening to music when the symptoms of an approaching attack set in; the fit, however, did not occur. From that time on, at the first appearance of the symptoms, she arranged for music to be played, and in this way succeeded in entirely overcoming the attacks.

In the present century, and particularly in the last decades, there has been a renewed interest in musical therapy which has shown itself chiefly along three lines: as a means of soothing pain; through collective application in hospitals, especially in psychiatric clinics, with the general aim of producing calming or tonic effects on the patients; and as a means of occupational therapy (treatment by activity).

A truly scientific musical therapy, and particularly its individual applications - namely those which aim at curing specific troubles in particular cases - should be based on a precise knowledge of the various elements of which music is composed and of the effect which each one of them has, both on physiological functions and on psychological conditions.

The principal musical elements are: rhythm - tone - melody - harmony - timbre.

1. Rhythm. This is the primordial and fundamental element of music. The music of primitive peoples consist solely of rhythm. It is, indeed, what the poet d'Annunzio has called it, "the heart of music." Rhythm is the element which has the most intense and immediate influence on man, and it affects directly both the body and the emotions.

Organic life is based on various rhythms: the rhythm of respiration; the rhythm of the heart-beat; the rhythm of the various muscular movements; the rhythm of activity and rest; the rhythms of the various bodily functions, not to speak of the more subtle vibratory rhythms of every cell, every molecule and every atom. It is therefore not surprising that the rhythms of music exercise a powerful influence on those organic rhythms, either stimulating or calming them, harmonizing or creating discord and disruption.
The psychological life of the individual as well as that of his body has its various and complex rhythms: the rhythms of elation and depression; alternations of sorrow and joy, of fervour and lassitude, of strength and weakness, of extraversion and introversion. All these conditions are extremely sensitive to the influence of the rhythm of music. There are also certain activities wherein the rhythms of the body, the emotions and music interpenetrate and become fused in one integral rhythm. This happens in dancing, which one may truly call living music, expressed with one's whole being.

In rhythm itself we must distinguish various elements: chiefly tempo or speed (andante, moderato, allegro, etc.) and meter or grouping of beats. Each of them has its own specific influence; for instance, the more rapid the tempo, the greater is the emotional tension produced. A valuable analysis of the psychological effects of the various metric patterns or designs can be found in the chapter on 'Emotional Expression in Music,' of the book Music and Medicine by Howard Hanson.

2. Tone. Every note, while physically produced by a specific rate of vibration, has at the same time both definite physical and psychological effects. As is well known, sound has great power over inorganic matter; by means of sound it is possible to cause geometric figures to form on sand and also to cause objects to be shattered. How much more powerful then must be the impact of this force on the vibrating, living substances of our sensitive bodies!

Each musical note has a specific quality, which cannot be expressed in words. This quality produces psychological effects, but one cannot ascribe a specific emotional quality to each note, and the various interesting attempts to relate each note to a corresponding colour have not given any sure results, as the asserted correlations varied from individual to individual. More efficacious than isolated sounds are successions of tones in which the effect of each single note is increased by its combination with others of a different pitch.

3. Melody. The combination of rhythms, tones and accents produces those musical "units" or "wholes" which are called melodies. These are the results of the creative activity of the composer - an activity which is often spontaneous or inspired. Speaking in psychological terms, such musical creations as well as other kinds of creative artistic production are elaborated in the higher levels of the unconscious, namely the superconscious. Melodies, being a synthesis of various musical factors, are a very apt means for the expression of emotions. They produce on the listener intense and manifold effects. They arouse not only emotions but also sensations, images and urges, and greatly influence the nervous system, respiration and circulation, in fact, all vital functions.

4. Harmony. While melody is produced by a succession of sounds, harmony is produced by the simultaneous sounding of several tones which blend with each other, forming chords. According to the respective rates of vibration of these sounds, the result will be either an harmonious blending or a jarring discord, both of which have definite physiological or psychological effects. Thus we may say that the prevalence of dissonances in modern music, being the expression of the discord, conflicts and crises that afflict modern man, tend with their suggestive influence to accentuate and exaggerate the evil.

5. Timbre. The difference in the nature and structure of the various musical instruments, the human voice included, gives to sound a special quality which can hardly be defined in words, but which is easily recognisable, because it evokes special emotional responses. Everybody who has some musical sensitivity feels the specifically different quality of the impressions made by a violin or a flute, by a trumpet or by a harp, by a soprano or by a bass voice.
A composer, through the skilful combination of various instruments of an orchestra, can produce most powerful psychological effects.

Before considering the healing effects of music and their utilisation, we must frankly recognise and examine its possible harmful influence. This should not surprise or shock us. Everything which is effective can be so either for good or ill. It is well to make clear outright that the medical effect of music does by no means have to coincide with its aesthetic value. There is "bad" music (from the standpoint of art) which is harmless, and on the other hand there is music by some of the best composers which can be definitely harmful. It is not a paradox to state that music of a harmful character, the more expressive it is aesthetically the more dangerous it can be.

The harmful effects of music on body and mind are due to various factors. The most important of these is the kind or quality of the music. But there are others of a secondary character which can be influential and at times even decisive. These are: the amount of the music heard; the combination and succession of different kinds of music; the psycho-physiological constitution of each listener; the particular emotional state in which he or she is at the time. Thus, a piece that is disturbing and upsetting to one person may have no or little injurious effect on another; for instance, a listener who is sensitive to music and whose passions are strong and not under control, will be influenced in a very different way from a listener of the intellectual type who is emotionally cold and unresponsive. If a person is in love, he will be much more disturbed and excited by erotic music than when his passion is dormant or when it has burned itself out, leaving only the cold ashes of disappointment. In some extreme cases, when listeners are abnormally sensitive, music can be the cause of serious troubles. Evidence of this has been given by Dr. MacDonald Hastings, who in his study on Musicogenic Epilepsy quotes twenty cases, eleven of them his own patients, in which epileptic fits were brought on by music. (Quoted by F. Howes in his book, Man, Mind and Music.)

There is then the manner of the arrangement of the concert program, when different and often opposite impressions, experienced in immediate succession, arouse confusing and conflicting emotions. Not seldom does it happen in concerts that the soothing effect of a piece will be destroyed by the exciting nature of the one that follows; the cheerful stimulation of a third piece is neutralised by the depressing influence of a fourth, and so on. Such contrasts can be variously appraised from the aesthetic point of view, but they certainly cannot be approved from the medical standpoint. Also the excessive amount of music at long concerts, showered upon the listeners, can cause nervous fatigue and psychological indigestion.

The kinds of music apt to produce injurious effects are manifold. First, there is the music that arouses the instincts and appeals to the lower passions, that excite by its sensual enchantment. To the musical pieces of this kind, among those having artistic value, belong the Venusberg scene in Wagner's Tannhauser and certain parts of Salome by Richard Strauss. Concerning the latter, Frank Howes, President of the Royal Musical Association, expresses the following severe judgment: "Some small quantity of art can best be described as fleurs du mal. Out of the festering corruption grows an exotic, gaudy, sinister, fascinating beauty. Fascination is an ambivalent emotion in which the attraction is enhanced by the concomitant repulsion. Strauss's Salome, from the Dance of the Seven Veils to the end, is an instance of such fascination; it dazzles, seduces, repels and conveys just that hothouse beauty of evil, the lurid, livid fungus growing on the dunghill." (Man, Mind and Music)
A second group of musical pieces of a harmful kind consists of those that are very melancholy and depressing, as they express languor and weariness, grief and distress, agony and despair. This kind of music may have great artistic merit and may have afforded relief to the composer himself and been a means of artistic catharsis, but it is likely to act like a psychological poison on the listener who allows its depressing influence to permeate him. Of this kind are certain pieces by Chopin, notably his nocturnes, in which that unhappy soul has given vent to his poignant melancholy and to his weakness and homesickness. They have contributed to the cultivation of that languid and morbid sentimentality which afflicted the young women of the romantic period of the last century.

Another type of music apt to be injurious consists of those musical compositions which, while representing interesting experiments in new forms of musical expression, reflect, with their frequent dissonances, their lack of form, their irregular and frenzied rhythms, the modern mind in its condition of stress and strain. Many modern dances, particularly jazz, combine over-stimulation with the disintegrating influence of their syncopated rhythms. Howard Hanson, in a very good essay on Emotional Expression in Music (contained in the book, Music and Medicine) exposes in a drastic way the widespread injurious influence of jazz. He says this: "I hesitate to think...of what the effect of music upon the next generation will be if the present school of 'hot jazz' continues to develop unabated. Much of it is crass, raucous and commonplace and could be dismissed without comment if it were not for the radio whereby, hour after hour, night after night, American homes are flooded with vast quantities of this material, to which accompaniment our youngsters dance, play and even study. Perhaps they have developed an immunity to its effect - but if they have not, and if the mass production of this aural drug is not curtailed, we may find ourselves a nation of neurotics which even the skill of the psychiatrist may be hard pressed to cure. It seems, therefore, only poetic justice that musical therapeutics should develop at least to the point where music may serve as an antidote for itself." (p.265)

Music, even when it is not directly stimulating the passions nor inducing depression and discordance, can be harmful owing solely to the fact that it arouses and nourishes an excessive state of emotion which, when it is not transmuted into constructive activity, weakens the character. This wallowing in sentimentality was sternly denounced by William James in these words: "There is no type of human character more despicable than the spineless, sentimental dreamer who wastes his life in a watery marsh of sensibility, but never does a single, energetic, concrete action. Rousseau, who inflamed with his eloquence all the mothers of France to follow nature and nurse their children themselves, and then sends his own children to the foundling hospital, is a practical example of what I am trying to point out.

"Thus the habit of feeling excessive emotion from music in the case of persons who are not performers and who do not have sufficient musical education to understand music in an intellectual way, has probably a relaxing and debasing effect on the character.

"We thus encourage the arousing of emotions which in the ordinary way are dissipated without suggesting any action, with the result that the sentimental state remains inert and sterile. The remedy is not to allow oneself an emotion at a concert without expressing the emotion afterwards in some way or other." (Principles of Psychology)

Finally, music can, and often does, have injurious effects on the performers themselves, who are subjected to a combination of harmful elements: muscular and nervous fatigue as a consequence of intense technical study and the excessive quantity of music, both heard and performed; the anxiety caused by public
performances; the particular contrast of psychological attitudes required by the performance itself, which demands on the one hand perfection of technique, concentrated attention and self-control, and on the other an emotional identification with the mood expressed by the music; needed to produce that warmth of expression, that powerful suggestion which fascinates the audience.

For these reasons performing musicians need, more than anybody else, to train their will, to control their emotions and to help themselves, or be helped, by a judicious use of relaxation and of all available means of psychotherapy.

Special attention should be paid to film-music. Superficially considered it would seem that such music is of no importance since in a cinematographic performance it is the picture which is of primary importance. However, such is not the case. From the very beginning - that is to say, at a time when the later invention of the sound-film could not yet be foreseen - cinematograph performances were accompanied by music, which proves that the important effect of music on the spectators was well recognised. It is a psychological law that the impressions which come to us through our senses are much more effective if related emotions, through the aid of other sense organs, are awakened within us.

There is also another psychological reason why accompanying music has a special effect upon the spectator. The conscious attention of the latter being completely concentrated upon the pictorial performance produces, instead of lessening, the influence of the accompanying music, a tremendous increase in the effect which the picture has. Research pertaining to the mechanism of suggestion and to the part the unconscious plays in the life of the soul has demonstrated that impressions received at the exclusion of waking consciousness and of critical judgment penetrate much more deeply into the individual; they affect man not only psychologically but also in his body and are even able to call forth functional disturbances.

Since music definitely increases the individual's receptivity to the impressions conveyed by film episodes, it seems highly desirable - from the medical as well as the pedagogical standpoint - thoroughly to examine film music and, where the effect is found to be harmful, to take steps to eliminate it. Often such accompanying music is sensual in character or overtly emotional and its effect upon the listener-spectator is enervating. Not seldom does it happen that through such music feelings of oppression and terror, created by film scenes, are reinforced so that their exciting effect is thereby greatly increased.

After having dealt with the dark aspects of the picture, let us now consider the bright ones.

Music can indeed be a powerful healing agent. There are many and diverse ways in which it can and does exercise a beneficient influence on both body and mind. First of all, its effect can be wonderfully restful and refreshing, and we need not emphasise how valuable this is in our times of physical exhaustion, nervous tension and emotional and mental excitement. The general and obvious prescription for the elimination of these conditions is a rest cure. But the men and women of our day do not know how to rest, or even what real rest means. They are accustomed to constant movement and noise so that they are unable to keep still and endure silence. Here music comes to their rescue. As Father Gratry pithily says: "There is no agent so powerful in giving us real rest as true music...It does for the heart and mind, and also for the body, what sleep does for the body alone." (Les Sources) Indeed, many peaceful and solemn adagios, many soothing
lullabies and "barcarolles" induce with their soft charm a beneficial relaxation in a more natural and healthy way than any chemical sedative.

More specific applications along these lines, with the purpose of inducing calm and soothing pain, have been made with patients undergoing dental treatment or surgical operations.

The following characteristic examples, which the New York Times reported a few years ago, will illustrate the kind and the results of such attempts: "The University of Chicago clinics experimentally introduced music to alleviate tensions of patients undergoing surgery....So successful was the experiment that the University of Chicago medical research centre will introduce music with anaesthesia in its six major operating rooms and its six preparation rooms, when it opens Chicago's first cancer research institution, the Nathan Goldblatt Memorial Hospital.....Music with anaesthesia is especially applicable to abdominal surgery, but it has been used in almost all types of operations. It has been found especially helpful to the peptic ulcer patients who are already so tense and nervous that the routine medical sedatives are not very effective. It is very important in cases where the patient is too old or ill to receive sedatives."

We have indicated how intensely music can work upon the feelings, and have pointed out the danger of this fact, but in many cases an emotional stimulus may be very opportune and helpful. For instance, there are a great many persons belonging to the practical or to the mental type, who have an undeveloped or repressed emotional nature, and this is apt to make them arid, dissatisfied, shut-up within themselves. To them music may give the magic touch which reawakens and warms the heart and restores communion with nature, humanity and God.

Then there is a kind of music, both instrumental and vocal, of a strong and virile nature, which arouses the will and incites to action. Such music has stimulated innumerable individuals to noble deeds, to heroic self-sacrifice for an ideal. Against all negative and depressive emotions, such as despondency, pessimism, bitterness and even hate, music of a gay, vivacious and sparkling character, and also music that expresses true humour, acts as a true counter-poison. It cheers and gladdens, smoothing the wrinkled foreheads and softening into smiles the hard lines of tightly closed lips. Such effects are produced by many compositions of Haydn, Mozart and Rossini.

What more efficacious, genial and acceptable means than music could a doctor devise for giving joy; that joy which the intuition of the ancients and the investigations of modern science alike declare to be a powerful tonic both for the mind and for the body?

The particular stimulating action which music exercises on the subconscious can have many good effects; for example, it can stimulate memory, a faculty that depends largely on the subconscious. In this connection the following statement by the accomplished musicologist, Professor Mario Pilo, is of interest:

"For myself, music performs a special action in arousing my memory, which is capricious and undisciplined, subject to lapses and slips that are often very annoying. More than once music has enabled me to retrieve from its hiding place, quite suddenly, some reluctant and elusive memory. Several years ago, a Neapolitan melody of no special merit, which was being played on a mandolin by a neighbour, enabled me in a few minutes to remember the subject of a manuscript I had lost years ago, also the ideas contained in it which I had tried in vain, at intervals, to put together again." *

* Mario Pilo Psicologia Musicale (Musical Psychology), Published Hoepli, Milano, p. 193-196.
Music can and does also quicken and facilitate intellectual activity and favour artistic and creative inspiration. There is, among others, the case of the Italian author Alfieri who relates that he "conceived nearly all his tragedies either at the moment of listening to music or immediately afterwards."

Through its influence upon the unconscious, music can have a still more definite and specific healing effect of a psychoanalytic character. If of an appropriate kind, it can help in eliminating repressions and resistances and bring into the field of waking consciousness many drives, emotions and complexes which were creating difficulties in the unconscious.

Music can then help also, through its charm and uplifting influence, to transmute and sublimate those impulses and emotional energies so as to render them not only harmless, but make them contribute to the deepening of experience and the broadening and enriching of the personality. We have the works of a great composer who, having lived through periods of intense stress and strain, was finally able to rise to some extent above his personal pain and to draw inspiration from it, expressing strength, joy and faith, and praising the goodness of life. I am referring to Beethoven. In some of his sonatas, particularly in the later ones, the releasing and sublimating process is easily discernible. The storms and alternations in the first parts of these sonatas are followed by a peaceful and triumphant conclusion."

And there is the noble poet Francesco Chiesa who intuitively perceived, and expressed with admirable art, this psychoanalytic and sublimating action of music, this high lesson of strength and optimism. In his poem L'Uccello del Paradiso (The Bird of Paradise), he describes the emotional and mental states induced by a violin recital.

(See appendix)

The previously discussed process of integration into the conscious personality of unconscious contents and their subsequent transmutation and harmonisation can in a certain respect be regarded as a process of synthesis. But there is a more specific process of psychosynthesis which is of three kinds, or rather, consists of three stages, each wider and more inclusive than the preceding one. They can be called respectively: spiritual psychosynthesis; inter-individual psychosynthesis; cosmic psychosynthesis.

The first - spiritual psychosynthesis - recognises the inclusion and integration into the conscious personality of higher psycho-spiritual elements of which it is not consciously aware, because they reside in the highest sphere of the unconscious, the superconscious.

Truly religious music is very effective in producing or favouring such a synthesis. It awakens and stimulates the spiritual "germs" which exist in every one of us, waiting to come to life. It lifts us above the level of everyday consciousness, up into the ethereal realms where light, love and joy ever reign. There are many musical compositions which produce such effects. We can mention only a few of the most significant examples, omitting the consideration of less accessible ancient and Oriental music: the Gregorian Chant which still evokes the highest religious emotions. Then there is Palestrina of whom it was said that he "was the first European composer to restore music to its original function - that of constituting a definite link between man and God." **

* SCOTT, Cyril, The Influence of Music on History and Morals. See chapter "Beethoven - Sympathy and Psychoanalysis."
** SCOTT, Cyril, op. cit., p. 240.
Next we must mention J.S. Bach whose music not only arouses the deepest religious feelings, but has a still greater synthesising influence which we shall discuss later; nor should we fail to mention Handel and his impressive oratorios.

Among the modern composers we find three who are markedly different from each other, but whose music, in diverse ways and with dissimilar techniques, produces powerfully spiritual effects: Cesar Franck, that pure and noble soul who succeeded in giving adequate musical expression to the Evangelical Beatitudes; Richard Wagner, who in Lohengrin and Parsifal evokes with the magic of sound the flight of an angelic host from heaven to earth, the feeling of spiritual love and compassion, and the sacred rites of the Grail Brotherhood; Scriabin who, through the use of daring combinations of sounds, endeavours to lift the consciousness to the heights of rapturous bliss and ecstasy.

The second kind or stage of psychosynthesis - inter-individual psychosynthesis - is one which is established between an individual and his fellow-man within a group of which he forms a part - from the smallest combination consisting of a man and a woman, to the family group which includes the children, on to the various social groups, the national groups and ever greater units, until his consciousness embraces in an harmonious relationship the whole of humanity.

Such inter-individual psychosynthesis is promoted by all music which expresses collective emotions and aspirations. It includes national anthems, marches and folk songs belonging to particular occupations or group activities; harvest songs, grape-gathering songs, etc., and many choruses from the operas of Verdi and others. The highest and most effective musical expression of the psychosynthesis of humanity is Beethoven's Ninth Symphony, which reaches its climax with the intonation of Schiller's words "Seid umschlungen, Millionen." (Be embraced, ye millions of men.) This subject will be dealt with further in the section on Collective Applications.

The third stage - cosmic psychosynthesis - consists of an ever increasing recognition and acceptance by the individual of the laws, the relationships and the rhythms governing life itself, in its widest sense. It could be called the discovery of, and the tuning in with, "the harmony of the spheres," the conscious participation in the great life of the universe. This subject has been ably treated by Aleks Pontvik who has expounded his views and has related some of the results of his musical experiments in a stimulating little book entitled Grundgedanken zur Psychischen Heilwirkung der Musik. (Fundamental Thoughts on the Psychic Healing Effect of Music.)* In this book the author adopts the Pythagorean conception of the universe as an ordered whole. The cosmos is built according to harmonious - and that means musical - laws and proportions. And he quotes in this connection Brantzeg's summary of Kepler's development of this principle: "Before all things were created there was geometry. This, since eternity, is a reflection of God; it gave Him the original pattern for the artistic structure of this world in order that it may become similar to its Creator. The fundamental elements of geometry are the divisions of the circle. They produce harmonies, they create earthly forms through the harmonious consonance of music and they give to the constellations of the zodiac their cosmic pattern. In music, harmony is the result of the composer's intuition, but among the stars it is produced by the geometrical necessity of the heavenly mechanics. God has given to the human soul harmonious proportions." **

According to Pontvik, the following conception gives the key to psychotherapy in general, and to musical therapy in particular: healing can be attained

* Published by Rascher & Cie, Zurich, 1948.
** KEPLER, H. Harmonicae Mundi, Book V.
only by starting from the whole. "It means the establishing, or re-establishing, of an harmonious equilibrium through the reconciliation of opposing elements within the whole. Thus the healing process of psychoneuroses can be indicated in musical terms as a progressive development which brings about, or restores, the fundamental harmonious chord." *

The technique of this healing action consists, according to Pontvik, in the evocation or musical expression of primordial symbols corresponding to what Jung calls archetypes. The music which can especially produce this kind of healing influence is that of J.S. Bach. Pontvik found in his experience that Bach's music evokes religious symbols, particularly that of a temple, the harmonious proportions of which are in their structure analogous to those of the universe. He supports his contention by two interesting quotations; one from Albert Schweitzer, who not only has to his credit great humanitarian achievements but is, besides, one of the most prominent authorities on Bach. Schweitzer calls a composition by Bach "an expression of the Primal Power which manifests itself in the infinite rotating worlds." The other quotation is from the writings of a Chinese sage: "Perfect music has its cause. It arises from balance. Balance arises from that which is right. That which is right arises from the world's significance. Therefore one can talk about music only with one who has become aware of the world's significance."

One of my students expressed in the following way the effect of Bach's music upon her: "When, last evening, in the light of the moon, I listened to the Second Suite, I became aware of all the grandeur of Bach's poise. His music is really a marvellous harmony of the three divine aspects; a song of love, unfolding itself in the light of intelligence, and impelled by will. That is why it enriches so much."

Musical therapy, in order to prove effective, should be applied according to certain rules which are based on psycho-physiological, rather than on aesthetic or artistic principles. Here are some of the more important ones:

1. Prior to the performance, the patient or group of patients should receive adequate information about the piece to be executed. Its nature, structure and particularly the effect to be expected, should be explained. In this way the listeners can contribute intelligently to the influence of the music upon their unconscious, and consciously assimilate it. For the same reason it is useful for the listeners to know beforehand the text of pieces which are to be sung, or to have the text right under their eyes. Often, also, in regular performances the strain to catch the words (which are not usually clearly pronounced, or which are submerged by the sound of the orchestra) interferes with the effect aimed at.

2. It is advisable for the patients to relax as much as possible before and also during the musical performance. This, too, helps them to "open the doors of the unconscious," so to speak, and to receive the full benefit of the musical influence. Such relaxation can be induced by a comfortable physical position, by subdued illumination, by verbal suggestions made by the doctor, and also by a short introductory musical piece of a soothing nature, even if, subsequently, one wants to produce stimulation or joyousness through appropriate pieces.

3. The right dosage is of importance. In general, a musical treatment should be of short duration, in order to avoid fatigue and, therefore, possible defence reactions.

4. Repetition can be, and has been found to be, helpful. Dr. G.W. Ainlay, who combines the qualities of medical doctor, violinist, pianist and composer, *Pontvik, op. cit., p. 30
states in his valuable paper on The Place of Music in Military Hospitals* the following: "It is quite astounding to see the good effects and relaxation that may be produced in certain types of neuropsychiatric patients by repeating soothing measures or phrases. The repetition seems to act like a gentle massage if properly done." However, we should remember that repetition of motifs and small sections is often adequately expressed in the compositions themselves, and that, if repetitions are too insistent, they can become annoying and even obsessing. Such an effect, for instance, is produced on some people by Ravel's Bolero.

5. The volume or loudness of the music should be carefully regulated. Generally, one should adopt a low volume of sound, not only in the case of soothing music, but also when music is brilliant and stimulating. The desired effect is produced by the rhythm and other qualities of the music previously mentioned (tone, melody, harmony, timbre), and not by the amount of sound which, when great, is apt to tire or jar on the nervous system.

6. For the same reason as indicated in section 2. of these rules, it is advisable for the patient to rest for a while after hearing the healing music. This favours its full and undisturbed action in and on the unconscious.

7. Due to the fact that the unconscious is not only active spontaneously during sleep, but also receptive to outer influences, musical therapy can be applied during the patient's sleep as well. The fact that music does affect the unconscious during sleep was proved many years ago by a series of experiments made by one of my co-workers, Dr. G. Stepanow, using the following technique. After having performed a piece of music during the subject's sleep, he awakened her and asked her to tell him what she had been dreaming. He found in every case that these dreams had been definitely affected by the nature of the music performed.

The therapeutic use of music during sleep is particularly indicated for children, for psychiatric cases, and in general for people who are restless and agitated when awake.

8. The choice of the musical pieces to be used requires careful thought and is more difficult than may appear on first consideration. It is sometimes necessary that the guiding principles, which would seem obvious and of general application, be qualified and even disregarded. Here are two such instances:

It would seem to be a matter of common sense to adapt the music to be performed to the social and cultural level of the listener. Indeed, in the majority of cases, simple uncultured people ask for, and enjoy, popular music and appear to be unresponsive to, and bored by, classical music. Yet there have been many instances in which such people were deeply affected by music of high quality by the great composers. Pontvik mentions several such cases, and one that is particularly convincing will be quoted in the next section on collective applications. This may be due to the fact that the main effect of music is on the unconscious and that, to some extent, the unconscious is independent of the conscious level and accomplishments of the personality. In the case of uncultured people, therefore, it is advisable to attempt to use the simpler but most impressive works of the great composers.

Another obvious rule would seem to be that of using music of a specific character (soothing, stimulating, cheerful) in order to arouse the corresponding emotions and conditions which appear to be lacking in, and are needed by, the patient. However, in actual practice the matter is not so simple. Cheerful music

* Music and Medicine, p. 328
may jar on a person weighed down by grief. A patient in a state of excitement and agitation may not be impressed by solemn adagios and become still more restless. On the other hand, when an individual who is dejected hears sad music, it can have an uplifting effect. In this connection I can quote a statement by one of my patients: "When I hear sad music composed by a man who suffered, as did Chopin, Beethoven and Tchaikovsky, I feel that I am 'seconded,' and in feeling the beauty of that music I forget that I am not well..."

But there is another and more general reason which complicates the choice of the music to be used. It is a fact that the appraisal of the very character of a given composition, and consequently its subjective effect, can vary according to the listener. A positive correlation between many musical works and the moods aroused by them in the listener does indeed exist, and this has been proved by the experiments made by Bingham, Hevner, Campbell, Capurso and others.* But the percentage of such correlation varies considerably from piece to piece, and there is in every case a larger or smaller minority of listeners whose reactions differ from or even oppose those of the majority. For instance, according to the data gathered by Capurso from his experiments with 1075 subjects, 50% of these considered Wagner's 'Ride of the Valkyries' as joyous, stimulating and triumphant, whereas 32% ascribed to it an agitating and irritating influence. In the case of Paganini's 'Perpetual Movement' the respective proportions were 82% and 14%. Moreover, even the same listener can receive a different impression or the same work according to the varying psychological or physical conditions in which he or she is at the time.

Owing to these individual differences in the reactions to music, it is advisable to ask each subject or patient to furnish a report - as accurate as possible, and preferably in writing - on the effects of music on him, both in the past and after each application of musical therapy. Such reports have a threefold purpose and usefulness. First, they offer data on which to base the further choice of music to be used in that particular case. Second, they represent for the patient a training in self-observation and in exactitude of expression which has psychotherapeutic value. Third, they contribute to the accumulation of relevant material for the progress of musical therapy. For this purpose I have prepared a Questionnaire which will be found at the end of this paper.

However, we should not base our judgment regarding the effects of a musical composition only on such reports, which depict the immediate and conscious reaction of the hearer. There are other effects which operate on unconscious psychological levels, and emerge only later, or even remain unrecognized, while they may influence the general condition of the patient.

The accumulation of such data and a careful observation of the therapeutic effects will in the future facilitate the selection, in an increasingly reliable way, of the musical pieces best suited to each patient and his particular trouble. Until such progress has been achieved, the specific "prescriptions" of musical pieces for various morbid conditions, given by some writers on the subject, should be regarded with the utmost prudence and qualification.

Meanwhile, there is one type of music which can safely be applied with satisfactory results in all cases, regardless of the patient's difficulties and physical age; and that is kindergarten and folk music. This, according to Dr. Ainlay, seems to "re-supply, or re-activate, the mother-child complex and so offer temporary security and sanctuary." Another more general reason is that the unconscious, or more exactly a considerable part of it, is of a primitive and childlike character. Such music should be used preferably in the first therapeutic

* Music and Medicine, p. 383-384

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applications, or as a prelude to other specific pieces.

9. In the future, the development of musical therapy may make it possible for musicians, who are also psychologists or doctors, to compose special music aiming at definite therapeutic effects. This may not be as remote as would appear on first consideration. One of my students, Miryam Viterbi, who is an accomplished pianist and has taken up the study of medicine, is planning experiments in this direction. The technique she has worked out for the treatment of obsessive ideas is reported in her own words in the Appendix.


Of course, no medical treatment should be confined to music; this can be only one of the various means used by a doctor. But here we refer to a specific use of music more or less simultaneous with other kinds of therapy. Up to now there have been mainly two kinds of such combined therapeutic applications:

(a) **Music and Anaesthesia.** In order to hasten or facilitate the anaesthesia, music has been and is being applied, both by individual doctors (generally dentists) and in hospitals. On page 7 we have already mentioned the use of music for this purpose in the University of Chicago clinics. Recently (1955) similar applications have been introduced at the Vaugirard Hospital in Paris with marked success. We cannot enter here into the technical details of such applications, but interested doctors can find a description of them in the periodical, "Anaesthesia and Analgesia," Vol. 29, 1950, and in Dr. Podolsky's book, Music Therapy (New York, 1954). In such cases the choice of suitable music is comparatively easy; it only needs to be soft, slow and soothing.

(b) **Music and Psychotherapy.** The two main objectives of psychoanalysis - namely, that of bringing into the light of consciousness psychological elements hitherto confined to the unconscious, and that of releasing and transmuting instinctual and emotional energies - can be greatly promoted by the use of appropriate music. The same can be said concerning the awakening and activation of the superconscious spiritual elements and the integration of the personality aimed at by psychosynthesis.

For these purposes music can be used, according to the specific effects desired, either before or after a psychotherapeutic treatment, or during an interval in the course of such treatment. Music can help also to solve inter-individual conflicts and bring about right human relations. A significant instance of such an effect deserves to be quoted in full. Here is what Aleks Pontvik reports:

"We ourselves have had the experience that suitable music at the critical moment of a discussion between two human beings can play a determining role in the sense that somehow its influence can be "disarming." It takes the sting out of aggressiveness and renders it unfit for the battle by dissolving the effects before these have had a chance to express themselves.

"We are able to report the case of a couple which had firmly decided on a divorce. They were sitting at a table, engaged in a violent discussion which left nothing to be desired as far as its acridity was concerned. Then someone came into the adjoining room and began to play the piano. The discussion had just reached the point where a definite decision regarding their separation was imminent.

"Suddenly, however, nothing came of it. Within half an hour an agreement was reached. Someone in the adjoining room had played Haydn for half an hour. Of course, one must not generalise this case. Subsequent examination of the matter, however, yielded interesting details on the interposition of the musical effect on
the critical, problematical, intellectual situation of these two human beings.
Above all, both felt pleasantly, calmingly paralysed. They felt somehow that the
conflict had 'split off' and become non-essential. It was a 'disarmament' in the
best sense of the word."

11. Musical performances by the patients themselves. This is the most
effective kind of musical therapy because it combines several beneficial results.
It furnishes a direct and easy outlet for pent-up emotions; it awakens the higher
feelings and uplifts the consciousness; it offers all the advantages of occupa-
tional therapy. An eloquent testimony to these effects has been given by Georges
Duhamel, the great French novelist, essayist, poet and surgeon, in his excellent
book, La Musique Consolatrice (Monaco, Editions du Rocher, 1944). The experience
which he reports occurred during the first world war, while he was serving as a
military surgeon at the front. He writes: "Whenever I happen to ponder upon music,
upon the upliftments and clarifications I owe to it, upon the graces it has showered
upon me, upon the secret relief for which I owe to it an everlasting gratitude,
and upon the place it occupies in my thoughts and even in my decisions, I often
invoke certain days of the year 1915."

"During my hours of rest, in the evening, I drank deeply of the humble
song I played on the flute. I was still very unskilled, but I kept at it, closing
my lips tightly and measuring my breath....By and by my most painful thoughts went
to sleep. My body, which had been completely occupied with the effort of enliven-
ing the magic tube, became lost to thought. My soul, purged of its miseries,
relieved, freed from all anguish, rose, lightly, in luminous serenity." (p. 69)

"I began to grasp that music would permit me to live. It could certainly
not diminish the horror of the massacre, the suffering, the agonies; yet it brought
to me, at the very centre of the carnage, a breath of divine remission, a principle
of hope and salvation. For a man deprived of the consolations of faith, music was
nevertheless a kind of faith, that is to say, something that uplifts, reunites,
revives, comforts. I was no longer forsaken. A voice had been given to me with
which to call, to complain, to laud and to pray." (p. 75)

Still more effective, but possible only for the minority of those who
have special musical talent, is creating music, either through free improvisation
on an instrument or through actual composing.

12. Collective Applications. These, too, are of two kinds, receptive and
active. Concerning the first, it has been ascertained that even an indiscriminate
listening to music of various kinds, such as that offered by the radio, has a helpful
effect. For instance, at the Central Hospital of Milan, a number of radio-
earphones were placed at the disposal of the patients with good results. The
invalids became calmer to the extent that care could be noticeably reduced. Con-
cerning the second, the training of psychiatric patients to play together in small
bands has yielded very gratifying consequences. It is remarkable how amenable
even serious cases are to this kind of organised collective activity; and the
patients like it. The chaplain and organist of the Asylum for Insane Criminals at
Montelupo, Italy, stated that the worst punishment for the inmates was to be ex-
cluded from participation in the musical performances. Another very helpful means
is that of teaching patients to sing together in choirs.

A wide use of music in hospitals, particularly in military and psychi-
atric wards, has been carried on in the United States since the second world war.

In a "Convalescent Reconditioning Program" Dr. Ainlay has outlined a

* PONTVIK, Aleks, Contributions aux Recherches sur les Effets
Psychiques de la Musique, p. 83-84

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detailed plan for many different applications of music.*

There is considerable scope for the application of musical therapy in prisons. Criminals should really often be considered as sick, neurotic or psychopathic individuals and therefore as human beings to be treated by means of psychotherapy and re-education. Correspondingly, prisons lose more and more their character of places of punishment and acquire that of institutions in which offenders are kept in seclusion for reasons of social security, but are, at the same time, actively helped towards recuperation. Good beginnings have been made in this direction, but much more could and should be done as rapidly as possible.

Definite applications of music have been made upon the inmates of prisons in various countries. An impressive example of the potent therapeutic effect of music, and a confirmation of the statement previously made about using "great" music with uncultured people also, is contained in the report issued by the "Prisons Musical Group" of Paris:

"The bold idea of introducing high-class music into Paris prisons has been crowned with complete success. One audience consisted of about two hundred women whose average age was barely thirty. Musical pieces of a very high order were played to them for an hour. We believe that in order to touch human beings of low character we must offer them the highest. In our opinion, this music in the prisons is not an entertainment for the prisoners, but a real means of cure capable of arousing individuals, of moving them and of assisting them to take their proper place in life.

"From the first bars the majority of the women were in tears. Under the impression of music, one of the girls who had been arrested for vagrancy and for leading an immoral life, broke down and retracted her assertion, which she had made to the authorities, that she was alone in the world. She revealed her secret to the director and gave him the name and address of her grandmother. The girl, who would have been sent to a convict settlement, was returned to her relatives and undoubtedly owes her salvation to the effects of music."

The field of musical therapy is indeed large, and the fruits it can yield are significant and precious. Its cultivation calls for a widespread cooperation between physicians, psychologists and musicians.

We trust that the magic of sound, scientifically applied, will contribute in ever greater measure to the relief of human suffering, to a higher development and a richer integration of the human personality, to the harmonious synthesis of all human "notes," of all "group chords and melodies" - until there will be the great symphony of the One Humanity.

Appendix 1

THE BIRD OF PARADISE

Naught could I see, closed in I was, low down
Behind a moving mass of hats, behind
A sombre wall of shoulders; then every whisper ceased
When he, the artist, forward came: all in an instant,
Like a sudden hush of waters

* Music and Medicine, p. 335 - 15 -
When winds get still . . . My eyes, unneeded now, I closed, and motionless remained, and silent.

But yet there was no darkness 'neath my lids,
Only faint shadow, dewy and silver-glowing.
The morning dawned all red, the violin
Began for him to whisper its first notes,
Its primal tones of wonder and delight.
Uplifting then my gaze I seemed to see

From out the flaming sun a Bird of Gold
Winging a rapid flight. From earth uprose
A mighty tree whereon the wanderer,
In rhythmic song, staying its dazzling flight
With airy wing scarce bent the flowering crown.
A sombre throng around the tree was massed;

Each one had come, with close-drawn cloak,
Hiding the secret dormant of his soul,
With knife-thrust in his heart, and knife held ready.
Each one with claws, and yet with greetings
In his hands, the mask upon his face.
All sadness; and the Bird of Paradise

Did but accentuate with sweetest song
The secret grief, the damp, pale lips
Of each and all. Loudly it wept,
And in the streaming tears that silently
Furrowed our cheeks, the Heavenly Bird was weeping.
It sang; our slower speech, our every word

It did transform, as though intoxicate,
Into its own delirium of joy.
From out the vast of Heaven, with arduous toil
It did dissolve and free the voiceless soul;
The crude, hard soul which, since our birth,
Coiled dumbly in the throat, has lain asleep.

And, as though drawn in darkness to the earth,
Downward it rushed; the Voice divine,
Reft of its glorious pinions . . . further still
To lower depths descended than ourselves
Do know; then, rose its flight, gaining new impetus,
And with the flight, upward the abyss was drawn.

And so down it rushed, like eagle to the assault,
The Bird Divine, its lovely plumage dimm'd
To dullest black, all brilliance gone; like swords
The stiffened feathers - hardly had it reached
With ready, open claws, the victim, suddenly
Upward it bounded, bearing its prey.
And as it rose, its golden hue returned;
Our fancrous thoughts, likewise transformed, rose also,
And our funeral garments, rising, changed
From dark to light, to silver, then to gold;
Our hair, now turned to grey with passing years,
Displayed the ardent colours of our youth.

And thus from out the narrow cloistered walls
Of custom we broke free; then at the foot
Of the great flowering Tree we found ourselves
And saw, but with a new and different vision,
As if beyond the present; hence,
Our life, and ourselves with it, were transported.

Under that spreading Tree the crowd now was
Gentle and harmless, like a field of corn
Bending in slow and ample undulations.
The glorious Song outpoured alike on all;
A breeze most lightly stirred the wings of gold.
Then spake the ethereal Voice: "O Man, it is

Thy weeping, like an airy veil, that lays
A soft transparent shadow on the eyes
Sated with seeing; let it overflow
And take its course; the furrows in thy cheeks
Shall now be filled with rivulets of light.
The joy that thou hast lost, O Man,

Seek in thy pain, seek it, until thou find
This or another, maybe more sweet and pure -
For joy is like a tree of sombre bark,
And wood within like to the plum and blackthorn,
Yet often upon the crown will flower a rose . . .
O Man, this is the Tree where Woman first

Did seem to hear from out the Leafy Bower
Perfidious hiss within the foliage hid . . .
Here, where the twisting Serpent met Eve's gaze,
My wings I spread; and this shall always be,
Where'er was bitterness, thou shalt have sweetness.
A power, stern, breaks and wears away

The rocky mountain pass, but thou shalt find
The steps and pathways where that strife has passed;
A thousand furies waste and rend the earth,
And pass away; the empty tracks of evil
The caves and valleys - here behold them filled
With azure waters; here behold the rivers,

Here the lakes, the good alone reflecting . . ."
MUSICAL THERAPY OF OBSESSIVE IDEAS

The case of a patient suffering from an obsessive idea - an idea which dominates him and renders his actions compulsive - offers an instance of the application of musical therapy by means of a special technique for creating unconscious associations.

Listening to a piece of music brings about an involuntary association between the music and the more or less latent emotions and thoughts of the patient. It is this association, which has been demonstrated by experiments, that forms the basis of a special music-therapeutic process whereby it has been found possible to disperse, or at least to modify, a morbid condition generated by an obsessive idea. It is, of course, necessary that the patient should never before have heard the music to be used, because any familiar piece would already have "impressed" other thoughts and emotions on the patient, likely to interfere in a negative way. The use of original pieces of music adapted by specialists to each particular case would be ideal.

This therapeutic technique can be briefly described as follows. The patient is invited to let go and to "live" his state of anguish with as much intensity as possible. At the same time he is made to listen to a piece of music selected for its ability to reflect his emotional state. The experience is then repeated until it is observed that an actual and intimate fusion between the music and the obsessive idea has taken place in the patient; until, in fact, the former is seen to evoke immediately the emotion associated with the latter. When this pattern of response has been firmly established, a short interlude precedes the second phase of the treatment.

This time the patient is invited to imagine that he is cured and freed from every trouble, that he is able to overcome, normally and naturally, the trials which he has regarded as fearful and difficult. He is made to listen, as before, to another piece of music, this time in harmony with a feeling of victory and inner peace. This phase is more difficult because, if the patient has succeeded easily in yielding to his anguish, he encounters serious obstacles in trying to identify himself with the picture of being cured; the principal reason being that, in the first phase, the situation is "lived," while in the second it is only imagined.

These two phases are a preparation for a third, which is the actual therapeutic stage after the two pieces - the one expressing anguish, the other the overcoming and the release - have been profoundly assimilated and identified by the patient with his own feelings. This time the patient is asked not to think of anything in particular, but only to allow the music he is about to hear to flow into him and affect him as it will. The composition should begin with the principal theme of the first piece with which the patient will, more or less consciously, associate his feelings of anguish. A bridging passage should follow, designed to link the first theme to a clear statement of the main theme of the second piece. The structure of this passage should express the inner conflict of the patient, his efforts to conquer his condition of anguish and to attain inner peace; the struggle between the two themes gradually culminating in the triumph of the second theme, which is then reinforced by variations of it.

Many such "auditions" may be required before a cure is arrived at, or substantial improvement obtained. The process is mainly an unconscious one wherein the patient, listening to the development of the musical conflict, will feel an upsurge of his real conflict - thanks to the technique of establishing the associations previously. He will pass through crises of anguish and experience moments of hope, to arrive at last at the stabilisation of a state of tranquility and
well-being.

Such is briefly the technique of this specific method of musical therapy. It is particularly applicable in the case of patients who lack a strong "will to get well."

Miryam Viterbi

QUESTIONNAIRE ON MUSICAL THERAPY

1. What beneficial or harmful effects of instrumental and vocal music have you noticed?

(a) Upon your physical health in general, and upon different bodily conditions (in particular, blood circulation; nervous system; physical pains; etc.).

(b) Upon your emotional life (emotional release; joyous elevation or depression; excitement; excessive emotions).

(c) Upon your imagination.

(d) Upon your intellectual or artistic activities (memory; intellectual work; inspiration; creativity).

(e) Upon your will and your external activity.

(f) Upon your spiritual life.

2. Could you cite specific effects derived from given musical compositions? Have you noticed that the same piece of music has produced on you different effects, according to the different physical or psychological states in which you were on various occasions? Can you quote some specific instances of such different effects?

3. Which of all these effects have you been able to observe in others?

4. What physical or emotional effects does music and singing have upon you as performer?

5. What are the effects produced upon you by rhythmic movement (rhythmical gymnastics; dancing)?