

The Importance of Music for a Time Like This: An Article for Parents and Teachers

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Music has a major place in the lives of most children. It serves many purposes not only in their lives, and also ours as adults. Perhaps the most important purpose is its therapeutic and healing power. This has become evident in the central role that music has played in the days since September 11, 2001, in national and community memorial services, tribute television shows, church services, and school and community events.

Many new songs in a variety of styles are being shared via radio, television, local concerts and other gatherings, each growing out of the emotional turmoil we have been experiencing individually, and collectively as a nation. A renewal of the singing of such "feeling-charged" songs such as *God Bless America*, *Amazing Grace*, *America the Beautiful*, *Bridge Over Troubled Waters*, *Let There Be Peace on Earth*, *This Land is Your Land*, *You'll Never Walk Alone* and many others is being experienced in our schools, at churches, at ball games, benefit concerts, and most communal gatherings.

A number of websites, such as the Healing Power of the Arts Website from the Colorado Council of the Arts (<http://www.artslynx.org/heal>) and The Arts and Healing Network Website (<http://www.artheals.org>) share ways that the arts are being used to assist individuals and communities in dealing with recent terrorist-related events. Many of the emails received in the past several weeks focus on ways that music and the other arts are vehicles for healing at a time like this. Coincidentally, the September issue of *Reader's Digest* included

an article entitled "The Healing Power of Music."

As parents and educators, it is important to know in what ways music has been and can be used therapeutically, as well as why and how music is able to facilitate these healing processes. The majority of material available through the public media is lacking an explanation of the processes involved, yet affirms that music has a powerful impact on all ages. Most of us have heard quoted, misquoted, or partially quoted William Congreve's famous statement, "Music has charms to soothe a savage beast. To soften rock, or bend a knotted oak." Centuries earlier, Plato wrote that "Rhythm and harmony penetrate very deeply to the inward places of the soul, and affect is most powerfully, imparting grace." Victor Hugo poignantly stated that "Music expresses that which cannot be said and on which it is impossible to be silent."

Since music does charm us, penetrate deeply into our soul, and express that which cannot be said, this article has been written to provide for you an insight as to why and how music is able to provide therapeutic healing for individuals of all ages, and even a nation in mourning and shock. To provide a perspective in examining what happens as we listen, create, and respond to music as it is processed and perceived by our brains, I will use a song from my childhood, "I'm IN-Right, OUT-Right, UP-Right, DOWN-Right Happy All the Time" as a framework to examine why music is and can be such an important part of

our personal and collective healing process.

IN-Music has the power to "get into us" through our ears, skin, and bones. The hearing sense is the first sense to develop in utero, the last sense to go at the end of life, and the only one we cannot shut off, or completely close down. Even under anesthesia, the auditory system continues to receive messages, which are stored in memory. Music can penetrate into all levels of our mind—conscious, preconscious, and subconscious (a paradigm or construct developed by Freud, with transpersonal psychology suggesting that we also have a supraconsciousness), into all three levels of our brain—cerebral, limbic, and brain stem, and into both hemispheres of our cerebral neocortex, thus affecting all of our systems. As music is received into the ear it initiates a brain process that has an effect not only upon our Central Nervous System, Autonomic Nervous System, and Peripheral Nervous System, but also in turn, our Endocrine System, Immune System, Cardio-vascular System, Respiratory System, and our Skeletal-Musculature System. The response of the brain and body to music is determined by a variety of factors, with four musical elements causing the major effects: loudness, tempo, degrees of dissonance and consonance, and timbre.

We now know a lot about the interrelationship between the mind and the body, and in essence, music can have an impact on any and all parts of our bodies. One of the medical models that provides insight into the immense capability

of music to provide healing, both emotionally/psychologically and physically, is the recent development of research in PNI, or psychoneuroimmunology. This provides a perspective that recognizes and researches how our thinking and feeling states (psycho) affect our brain cells (neuro) which in turn influence our health (immunology—the study of the immune system). As stressors increase at a time of crisis (both real and imagined), an increase in the production of stress hormones causes effects such as poor sleep habits, memory lapses, learning difficulty, lack of attention, susceptibility to illness, anxiety, and high blood pressure. Many other symptoms are often realized in one of three systems: (1) gastrointestinal, possible upset stomach, irregular bowel habits, and ulcers; (2) skeletal-muscle, resulting in tension and soreness throughout the body, back aches, fatigue, and headaches, and (3) cardio-vascular, resulting in high blood pressure, irregular heart beats, and headaches. What enables music to be an important therapeutic aid during times of stress is its ability to change both mental and physical stress responses.

Music, a symbolic communication language that is able to express, represent and communicate feelings and emotions that are ineffable (incapable of putting into words) offers both a receptive and expressive sound language system that is able to capture a wide repertoire of human feelings and emotions. As music penetrates into our brain, it produces brain cell changes, both electrical and chemical, that result in changes in body systems and functions. Music has the ability to integrate the thinking and feeling functions of our brains.

Our response to music as it enters our body through the brain (and is

carried by the vagus nerve through out the body) is why music can change heart rate, modify brain waves, impact blood pressure, influence breathing rate and depth, impact digestive processes, affect energy level and metabolism, and impact our cognitive functions. In recent studies, music has been shown to produce changes in brain chemistry: decreasing stress hormones—ACTH (adrenocorticotrophic hormone) and adrenalin; increasing pain reduction and mood elevating chemicals, endorphins; increasing mood and emotion moderating chemicals, serotonin; to stimulating the production of chemicals that aid in sleep, melatonin. Music can also enhance or hinder memory, depending upon what type of music is used. Many writers of books dealing with sound therapy, music therapy and music medicine suggest that specific sounds, pitches, and music may have an effect upon specific organs and cells. Choosing the "right music" to put IN our brains is critical for a time like this. Because each person responds to music uniquely, based on past association with and experiences of music, music education background, age, personal preferences, emotional state, and perceptual listening styles, there can be no generic prescription for the "right music" that will apply to all individuals. However, research has shown that the body responds initially to the loudness, tempo, dissonance, and timbre of music chosen. The music that has the appropriate balance among these elements, represented symbolically in sounds that evoke the sense of tension and release, can produce the most healthful and therapeutic responses. The music of the baroque and classical composers has consistently been shown to produce the most healthful responses in individuals of all ages. *Relax with the Classics* recordings are representative of many that

have been used worldwide for all ages and in a variety of situations to provide a healthful sound environment.

OUT music also has the power to help children and adults release, or let OUT their emotions. Because music is a symbolic language that represents moods, emotions, and feelings through sounds, the active process of making music and responding to music enables individuals to release their feelings in a cathartic way. Because each person has a unique cognitive and emotional make-up, a variety of several different music-making processes may need to be explored to determine through which musical OUTlet the most benefit can be derived. These include playing instruments, singing, moving to music, creating music, and listening to music. Emotions and feelings that are not released can produce psychosomatic illnesses, and may be toxic to the brain. The complexity and sophistication of the music can be adapted to be age-appropriate, technically and textually, if words are included with music.

In times of fear, anxiety, stress, and uncertainty there is a tendency to dwell on that which is of concern, sometimes obsessively. There are a variety of explanations why music and music-making can bring us OUT of ourselves: music provides a non-threatening socialization experience, as we relate to common experiences with others locally and nationally, cross-culturally, and intergenerationally. Music listening and music making utilizes our brain cells (neurons) as a stimulus that keeps OUT those thoughts that may concern us, a process used in medical applications and in pain management.

From recent brain research on learning styles, it has been estimated that 80-90% of what is

experienced and learned is non-verbal, with what sometimes is described as a "right-brain" mode of processing. We know that for most children and many adults, music is a "right-brain" dominant activity. Based upon that, music may be a powerful and perhaps dominant means of facilitating positive and expressive feelings that can be experienced individually and in groups to take them OUTside themselves. In other words, music provides a symbolic means of objectifying feelings and emotions, which then can be dealt with. Music-making can be an emotionally cathartic experience, as feelings which are often "bottled-up", sometimes due to lack of words to identify and describe them, are released through music. After music-making, we often hear musicians, young and old, commenting that they feel better, energized, and renewed.

UP Music has the wonderful ability to lift UP spirits. Parades, pep rallies, school socials, church services, concerts, radio and television, and recordings are examples of situations and processes through which most of us have experience our moods, emotions, and feelings being lifted. There are both psychological and physiological explanations for why and how music can and should be used for this purpose during a stressful time. As music stimulates creative and imaginative thinking linked with positive emotional feelings, individuals experience a transformation or transition of being lifted UP from mundane concerns. When these are the result of music experiences that produce what psychologist Abraham Maslow termed "peak experiences", there is a temporary sense of being lifted UP beyond the limitations of normal time-space constraints, often resulting in a sense of non-linear time and feeling of being "one with the music."

Maslow describes these experiences as necessary steps toward what he called the "self-actualization" process, and suggested in a Symposium at Tanglewood that music may be the most effective means of lifting individuals UP toward emotionally healthy growth.

Psychiatrist John Diamond, a pioneer in behavioral kinesiology, has focused his career and publications on exploring the power of music to give us "life energy." In his books, *Your Body Doesn't Lie* and *Life Energy in Music*, he shares how music can increase our strength and lift us UP mentally and emotionally. In recent years a significant amount of research has been done exploring the connection between music and how it affects the human brain. With the discovery of the neuropeptides, endorphins, it was found that music can stimulate its production, reducing pain reception as well as lifting UP spirits.

Throughout the history of mankind, music has been known as a mediator between the physical world and the spiritual world, and has been an integral part of all cultures and most religions. Music can alter our consciousness, helping us to transcend our sensory-limited, inwardly-focused experiences, and expand beyond our experience-based reality. Mystic, meditative and spiritual experiences are often initiated through music, as well as heightened by music.

Albert Schweitzer wrote, "All true and deeply felt music, whether sacred or profane, journeys to heights where arts and religion can always meet."

In recognizing the power of music to enhance our lives, Charles Darwin wrote, "If I had my life to live over again, I would have made a rule to read some poetry and listen to some music at least once a

week; for perhaps the parts of my brain now atrophied would thus have been kept active through use. The loss of these tastes is a loss of happiness, and may possibly be injurious to the intellect, and more probably to the moral character, by enfeebling the emotional part of our nature."

Music can have a positive influence on many aspects of our lives. In a recent release from the American Music Conference, the following 10 Fast Facts were included concerning the impact music can have on learning, health, and wellness.

- (1) Music has an obvious impact on the brain and should be supported and encouraged, especially in early childhood education and throughout all stages and ages of learning.
- (2) Playing an instrument strengthens eye-hand coordination and fine motor skills, as well as concentration, memory, and attitude.
- (3) Research shows that music training improves spatial-temporal reasoning in preschool children, which is necessary for learning math and science, as well as other subjects.
- (4) A recent study showed that a curriculum combining piano lessons, educational math software, and fun math problems, helped second graders achieve scores on advanced math concepts and Stanford 9 math scores comparable to those of fourth graders.
- (5) Students who make music have been shown to get along better with classmates and have fewer discipline problems.
- (6) Young people who are involved in making music in their teenage years score 100 points higher on the SAT's than those who don't play music.
- (7) Senior citizens who are actively involved in music-making enjoy significant health benefits. For example, studies show that music activates the cerebellum and

therefore may aid stroke victims in regaining language capabilities.

(8) Many of the challenges that plague older Americans appear to respond positively to active music-making. For example, scientific studies show improvements in the brain chemistry of people suffering from Alzheimer's Disease.

(9) Studies show that older Americans who are actively involved in music-making show improvements in anxiety, loneliness, and depression—three factors that are critical in coping with stress, stimulating the immune system, and improving health.

(10) A breakthrough study demonstrated that group keyboard lessons given to older Americans had a significant effect on increasing levels of human growth hormone (HGH), which is implicated in such aging phenomena as osteoporosis, energy levels, wrinkling, sexual function, muscle mass, and aches and pains.

DOWN: One of the most significant implications for using music for a time like this, is the ability of music to help manage stress levels. In times of anxiety, threat, fear, and uncertainty, our body produces hormones that are available to energize us to fight or run away, producing what is known as the "Fight or Flight Response." When we are stressed from perceived fears, chemicals are produced in the brain that activate the sympathetic response of our automatic nervous system. The ACTH is carried in the blood stream to the adrenal gland which produces adrenaline (also called epinephrine) which accelerates the heartbeat, increases blood pressure, inhibits digestion, inhibits salivation, dilates pupils, and most importantly for children, affects learning and memory. Under extended periods of distress not only are cognitive functions affected, but emotions are often out of control, behavior becomes erratic, and the immune system

loses its ability to fight disease.

Because music can have a direct effect upon bodily functions, music with appropriate tempo, predictable patterns and cadences, clearly defined consonant resolution of tension produced by dissonance, and sounds that are neither significantly loud or high pitched, can activate the slowing DOWN of the autonomic nervous system. The body responds to music that has a slower tempo and heartbeat will slow down, blood pressure will decrease, respiratory rate will decrease, digestion and salivation will be stimulated.

Studies have shown that music can also have a positive effect upon the immune system. In addition, music that has a slow tempo, soft dynamics, more consonance than dissonance, and an appropriate balance between low and high-pitched sounds, will change brain wave states, one of the prerequisites for initiating a relaxation response.

When individuals are anxious and stressed, the brain often stays in an active beta state, with brain waves 13-40 cycles per second. Relaxation occurs when the brain slows DOWN to an alpha state of 8-13 cycles per second, or even a high theta state of 6-7 cycles per second. Music with order and predictability can also slow DOWN the amount of "inner talk" that goes on in our minds, more under stress than when relaxed, as well as the extent of scattered and obsessive thinking. For many individuals, playing of instrumental classics cuts DOWN on distractions and stress while studying, either serving to mask other sounds or keep the "right hemisphere" (the dominant side of the brain that responds to music in a majority of individuals), occupied as it seeks stimulation. For others, the process of making music releases "nervous energy" and slows DOWN the amount of body and mind activity often

associated with stressful situations. A number of relaxation approaches are enhanced when music is used as provided structure as well as integrates mind and body. These include both those that involve physical responses; progressive relaxation (tensing and relaxing muscles rhythmically from the toes to the head), stretching and breathing programs; and those that are primarily psychological, meditation, visualization, somatic focusing and guided imagery.

Parents and music educators have a powerful tool in music to help students, and themselves, deal with the mental and emotional impact of the recent terrorist attacks upon our country. Feelings and emotions that defy words, are often best expressed and communicated through the language of music. The therapeutic power of music has been clearly evident in so many ways in the past months since September 11.

While music is primarily taught by music educators for aesthetic and musical purposes, used by classroom teachers for functional purposes, presented by recording and performing artists for entertainment purposes, and utilized by churches for worship purposes, "for a time like this" I suggest that we acknowledge and utilize music's therapeutic and healing power to help make our schools, homes, and nation an emotionally, physically, mentally, and spiritually healthier place.

Pablo Casals said it well, "Music gives peace to the restless and comforts the sorrowful. They who no longer know where to turn find ways, and those who have despaired gain new confidence and love in music."