*Extended Abstract*

# The Extensive Study of Adygean Ethno- Music and Sound Therapy in the North Caucasus Mountains Influenced the Hypothetical Design of a Therapeutical Sound System Capable of Creating Balance and Symmetry in the Human Body with Energetically Forced, Sympathetic Resonance and Entrainment.

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## Introduction

The ethno- music/sound therapy of the North Caucasus Mountain region of the Republic of Adygea has caught great interest. Adygean therapeutic music is culturally significant and evolved over hundreds of years. The people living in the North Caucasus Mountains, where allopathic treatment is less available, rely on music therapy to a large degree—with a high percentage of healing wonders[1]. Adygean music therapy is used for the treatment of any condition, which includes; Stress, pain, emotional imbalances, terminal illness/hospice[2].
The study of ethno- music therapy influences further development and refinement of western music and sound therapy techniques[3].

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[1] Jonathan Goldman, *The 7 Secrets of Sound Healing* (New York: Hay House Inc, 2008), 114

[2] Ibid., 114

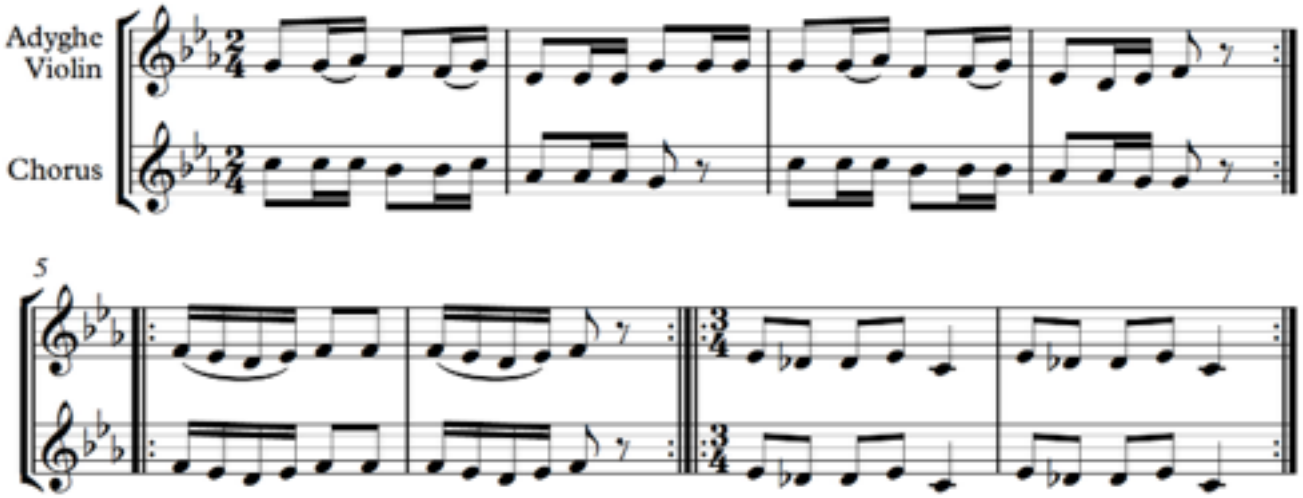
[3] Benjamin D. Koen, ed. *The Oxford Handbook of Medical Ethnomusicology* (New York: Oxford University Press, 2008), 303

An interesting facet of Adygean music therapy compared to ethno- music therapies of other cultures is that, the backbone or the fundamental idea of the treatment is the actual sound source and tone itself, musicians select special tones or frequencies and manipulate accordingly.
Healing human ailments through sound therapy is the future, more information about sound and its healing powers are beginning to unravel, with the assistance of neuroscience[4].

**Methods**

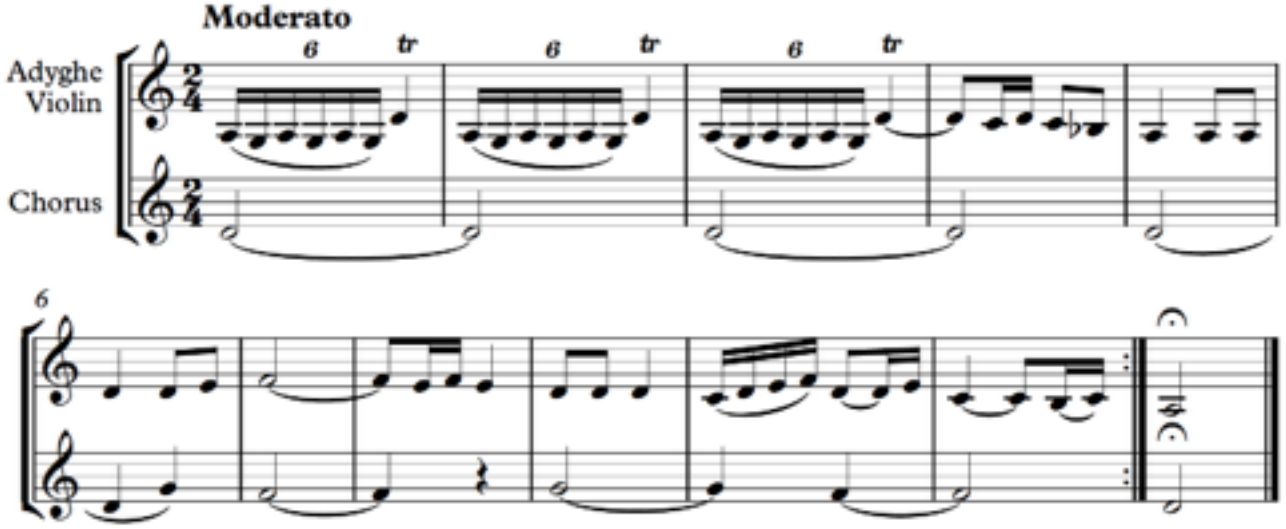
The Analysis of the following Adygean therapeutic melodies; *Melody for Distraction from Pain* (Figure 1) and *Melody for the Operation of Removing a Bullet* (Figure 2) has shown the important musical elements and their connectedness to our physical and psycholological states. These musical elements working in harmony, have a great influence over those states.

**Figure 1. Melody for the Distraction from Pain (**David Aldridge and Jorg Fachner, (e.d). *Music and Altered States: Consciousness, Transcendence, Therapy and Addictions* (London: Jessica Kingsley Publishers, 2005), 79).




[4] Goldman, *The 7 Secrets of Sound Healing* , x

**Figure 2. Melody for the Operation of the Removing a Bullet ((**David Aldridge and Jorg Fachner, (e.d). *Music and Altered States: Consciousness, Transcendence, Therapy and Addictions* (London: Jessica Kingsley Publishers, 2005), 79).




These melodies are used instead of sedation during the procedures, they are soothing and reduce the perception of pain greatly. Darcy Walworth demonstrates this in her present- day study[5].
Listening to both melodies, they are pleasant to the ear. One study featured in the European 'Journal of Pain' confirmed that listening to pleasant music reduced pain drastically[6].

Both melodies were performed loud in volume at the start. Immediate response to loudness is a evolutionary phenomenon, which was important to our survival. Loudness draws our attention instinctually and is experienced and perceived as "exciting".
Adygean musicians focused on stimulating the *sacculus* in the ear by boosting the loudness of the low frequency sounds above 90dB. The *sacculus* has neural connections to parts of the brain associated with pleasure and reward. Loud music is a strong stimulant[7].

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[5] Darcy DeLoach Walworth, "Procedural-Support Music Therapy in the Healthcare Setting: A Cost-Effectiveness Analysis," *Journal of Pediatric Nursing* 20, no. 4 (2005): 276-84.

[6] Don Campbell and Alex Doman. *Healing at the Speed of Sound: How What We Hear Transforms Our Brains and our Lives* (New York: Plume Printing, 2012), 106.

[7] Barry Blesser (n.d). "The Seductive (Yet Destructive) Appeal of Loud Music" http://www.blesser.net/downloads/eContact%20Loud%20Music.pdf (accessed January 21, 2015).

In combination with loudness, the melodies are sung and played with the intensity that match the intensity of distress, then gradually reduce in tempo and dynamics[8], their distress and pain will slowly diminish to a more balanced state[9]. This process is known as *Weaning Entrainment.*
In the piece *Melody for the Operation of Removing a Bullet,* the choirs rhythm was composed with the purpose of creating entrainment. The held note entrains or synchronises the overly excited brain waves to the external pulses, after which heart and breath rate will follow[10].

Music therapy performance with the intention of entrainment will alter the function of the nervous system[11], in this instance to discharge it, thus calming the body.
Both pieces of music are in the lower register emphasises the low frequencies. During the procedure of removing a bullet or distraction from pain it is important to discharge the highly aroused nervous system. Electrical impulses converted from sound energy reaches the cortex then distributes it via vagus nerve branches throughout the body. The *Cells of Corti i*n the basilar membrane are responsive to high frequencies, so transmit a greater amount of impulses to the cortex. Lower frequency sounds blunt motor responses and have a sedating effect on the body[12].

The choir sings in a style similar to Gregorian chant, the fundamental tones are attenuated to some degree in order to enhance the richness of the harmonics[13]. The harmonics are tones that vibrate above a fundamental tone and relate to the concept of wholeness and biological connectedness to nature i.e. the active constituent of sound therapy[14].
The harmonic resonance produced from the combination of violin and choir effects the electrical fields of the body and stimulates the vagus nerve.
The vagus nerve is one of the twelve cranial nerves and the only nerve, that connects the ear with the whole human body, including the heart, lungs, stomach, and abdominal organs[15]. All the sounds present in this piece of music stimulate the vagus nerve activity, acting on the parasympathetic nervous

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8 Linda L. Chlan, William C. Engeland, Anita Anthony, and Jill Guttormson, "Influence of Music on the Stress Response in Patients Receiving Mechanical Ventilatory Support: A Pilot Study," *American Journal of Critical Care* 16, no. 2 (2007): 141-45.

9 Dr. Alexander Mauskop, "Music Relieves Migraine Headaches and Pain," Headache News Blog, http://www.nyheadache.com/blog/?p=59.

10 Joshua Leeds. *The Power of Sound*, 41

11 Ibid., 41

12 Timothy M. Gilmor, Paul Madaule and Billie Thompson. *About the Tomatis Method* (Toronto: The Listening Centre Press, 1989), 84

13 Joshua Leeds. *The Power of Sound*, 86

14 Joshua Leeds. *The Power of Sound: How to Be Healthy and Productive Using Music and Sound.* (Vermont: Healing Arts Press, 2010), 168.

15 Timothy M. Gilmor, Paul Madaule and Billie Thompson. *About the Tomatis Method*, 85

system, by calming the body, promoting relaxation slowing down the heart rate and reducing of pain significantly[16].

A clinical study in Belgium is looking at the negative effects of low vagus nerve activity and the influence it has over tumour growth. Stimulation of the vagus nerve with sound will be an effective supplement to cancer treatment, and other diseases including; epilepsy, treatment-resistant depression, anxiety, Alzheimer's disease, morbid obesity, and migraine headaches[17].

Only through sound therapy the vagus nerve will be maintained correctly. The study of this music leads to the exploration of a system capable of stimulating the positive vagus nerve activity via the ear. It will be possible to achieve this after discovering the exact resonant frequency of the nerve.

Nickalai Fedotov is currently working on a project capable of creating balance and symmetry in the human body with energetically forced, sympathetic resonance and entrainment. This sound therapy system will correct physiological and psychological imbalances. This system will include tuned acoustic church-bells as the pure tone source, a Kirlian camera operating in real-time to track progress of the correction procedures and the electromagnetic reaction to the sound vibrations. This system will also need to have an accurate technology to record the frequencies of cells. There are two methods that could assist in the search of accurate frequencies of cells.

Currently, a technology under development by Wright State University that uses a sensor to detect viral resonant frequencies[18]. Elaborating on this technology will aid in finding accurate frequencies of any cell. The second method will be a guess and check procedure featuring a Kirlian camera filming the effects on cells whilst ringing bells. It is known through the experiments of Fabian Maman, that healthy cells resonate and expand whereas unhealthy cells don't[19].

**Results and Discussion**

Studies of the voice and all other instruments, both western and non- western, for therapeutical applications were explored. The harmonics and sound envelope were examined. Electronic sources were also examined but the harmonics do not function in a therapeutic sense.

The instrument chosen for ongoing studies and therapeutical applications is the church bell. Not all bells are created equal, they must have gone through years of refinement. Bells have a stronger and

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16 Gidron, Yori., De Couck Marijke., and De Leeuw, Inge. 2015. "Clinical research: Stimulation of the vagus nerve as a potential cancer treatment" http://www.anticancerfund.org/projects/clinical-research-stimulation-of-the-vagus-nerve-as-a-potential-cancer-treatment (accessed January 24, 2015).

17 Shellock, G. Frank., Begnaud, Jason., Inman, Michael. (n.d). "Vagus Nerve Stimulation Therapy System: In Vitro Evaluation of Magnetic Resonance Imaging-Related Heating and Function at 1.5 and 3 Tesla" http://www.imrser.org/pdf/vns_shellock_article.pdf (accessed January 23, 2015).

18 Hannah, Jim. 2013. "Catching the bug: Researchers developing virus-detection technology" http://phys.org/news/2013-09-bug-virus-detection-technology.html (accessed January 28, 2015).

19 Joshua Leeds. *The Power of Sound*, 38.

more penetrating natural vibration compared to other instruments or sound sources. The timbre of the sound and the structure of the instrument itself is what makes this possible. With a full- bodied sound the harmonics of the tones are accentuated, thus providing deeper penetration. The long- decay tone allows for extended therapeutic influence. The sound's strong electromagnetic energy charges the body's electromagnetic field to a greater degree, creating the perfect environment for healing.

Experienced bell ringers in Russia report being free of illnesses for many years and hereditary ringers tend to live a long life![20] Bell vibrations have a strong effect on the whole body, engineer- physicist Yuri Kornilov has studied bells and concluded that bells are harmonious with the human body, resonating organs and cells[21]. The power and purity of church bells vibrate the body by stimulation of the vagus nerve and through bone conduction.
All projects will be based upon forced sympathetic resonance, an external sound matching the resonant frequency of another forces its tone upon it, applying enough force to explode the invading cell or organism[22]. First we find the resonant frequency, then form a resonant system which the target object or cell[23]. An example of forced resonance and how it will destroy foreign or defective cells could be compared to an opera singer's voice shattering glass. To find the natural sound of the glass the singer taps it lightly. The sound is the natural resonant frequency of the glass. Then the singer holds steadily with a pure tone matching that frequency. The power of the amplitude of the vocal sound exceed the strength of the glass and therefore shatters[24].

The bell creates a full spectrum of sound, which is imperative for balance and symmetry in the body. The elevated energy of the tone and the changing amplitude over time produced, provides forced, sympathetic resonance and entrainment to occur not only at a faster rate but a more powerful connection is involved.

**Conclusions**

Evidence from historical sources shows the power that sound had in the past and the predictions for the future; the Old Testament in the christian Bible features a story of Joshua and the destruction of the walls of Jericho with a resonant sound tone[25]; Edgar Cayce, a psychic predicted that the medicine of

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[20] Tatiana Kharlamova, (n.d). "Bell Ringing Heals Illness and Depression" http://www.russianbells.com/interest/zdorovie/zdorovie.html (accessed January 28, 2015).

[21] Ibid., http://www.russianbells.com/interest/zdorovie/zdorovie.html

[22] Randall McConnell, *The Healing Forces of Music* (Boston: Element, 1991), 21

[23] Joshua Leeds. *The Power of Sound*, 15

[24] Donald E. Hall. *Musical Acoustics* (Belmont, Calif: Wadsworth, 1980), 233

[25] Goldman, *The 7 Secrets of Sound Healing ,* 75.

the future would be sound[26]; Rudolf Steiner, a German philosopher predicted that "pure tones will be used for healing…"; Nostradamus foretold cancer cure with pure tones[27]; the ancient Hebrew text explains how David played his Harp for refreshment of Saul's soul (The Old Testament, I Samuel, Chap.16 verse 23); Thales cured a plague in Sparta with music in 600 B.C and Pythagoras stated that through music, mental disorders will be cured[28].

What the Adygean musicians have been doing for hundreds of years is only now being verified by studies across the globe.
Adygean historical music/ sound therapy theory will continue to hold uphold close ties to present day therapeutical sound therapy system with the prime application of church bells, in the treatment and formation of balance and symmetry within the human body.

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[26] Ibid., x.

[27] Gaearth Arem and Kimba Arem 2013. "The Future of Sound Therapy". http://gaearth.com/sound-as-medicine/the-future-of-sound-therapy/ (accessed January 18, 2015).

[28] Alan. P, Merriam. *The Anthropology of Music* (Illinois: Northwestern University Press, 1964), 111.

**References and Notes**


1. Aldridge, David., and Fachner, Jorg. (e.d). *Music and Altered States: Consciousness, Transcendence, Therapy and Addictions.* London: Jessica Kingsley Publishers, 2005.

2. Arem, Gaearth., and Arem, Kimba. 2013. "The Future of Sound Therapy". http://gaearth.com/sound-as-medicine/the-future-of-sound-therapy/ (accessed January 18, 2015).

3. Blesser, Barry. (n.d). "The Seductive (Yet Destructive) Appeal of Loud Music" http://www.blesser.net/downloads/eContact%20Loud%20Music.pdf (accessed January 21, 2015).

4. Campbell, Don., Doman, Alex. *Healing at the Speed of Sound: How What We Hear Transforms Our Brains and our Lives.* New York: Plume Printing, 2012.

5. Darcy DeLoach Walworth, "Procedural-Support Music Therapy in the Healthcare Setting: A Cost-Effectiveness Analysis," *Journal of Pediatric Nursing* 20, no. 4 (2005): 276-84.

6. Gidron, Yori., De Couck Marijke., and De Leeuw, Inge. 2015. "Clinical research: Stimulation of the vagus nerve as a potential cancer treatment" http://www.anticancerfund.org/projects/clinical-research-stimulation-of-the-vagus-nerve-as-a-potential-cancer-treatment (accessed January 24, 2015).

7. Gilmor, M. Timothy., Madaule, Paul., Thompson, Billie. *About the Tomatis Method.* Toronto: The Listening Centre Press, 1989.

8. Goldman, Jonathan. *The 7 Secrets of Sound Healing.* New York: Hay House Inc, 2008.

9. Hall, Donald E. *Musical Acoustics.* Belmont, Calif: Wadsworth, 1980.

10. Hannah, Jim. 2013. "Catching the bug: Researchers developing virus-detection technology" http://phys.org/news/2013-09-bug-virus-detection-technology.html (accessed January 28, 2015).

11. Kharlamova, Tatiana. (n.d). "Bell Ringing Heals Illness and Depression" http://www.russianbells.com/interest/zdorovie/zdorovie.html (accessed January 28, 2015).

12. Koen, D. Benjamin, ed. *The Oxford Handbook of Medical Ethnomusicology.* New York: Oxford University Press, 2008.

13. Leeds, Joshua. *The Power of Sound: How to Be Healthy and Productive Using Music and Sound.* Vermont: Healing Arts Press, 2010.

14. Linda L. Chlan, William C. Engeland, Anita Anthony, and Jill Guttormson, “Influence of Music on the Stress Response in Patients Receiving Mechanical Ventilatory Support: A Pilot Study,” *American Journal of Critical Care* 16, no. 2 (2007): 141-45.

15. Mauskop, Alexander. “Music Relieves Migraine Headaches and Pain,” Headache News Blog, http://www.nyheadache.com/blog/?p=59. (accessed January 23, 2015).

16. McConnell, Randall. *The Healing Forces of Music.* Boston: Element, 1991.

17. Merriam, P. Alan. *The Anthropology of Music*. Illinois: Northwestern University Press, 1964.

18. Shellock, G. Frank., Begnaud, Jason., Inman, Michael. (n.d). “Vagus Nerve Stimulation Therapy System: In Vitro Evaluation of Magnetic Resonance Imaging-Related Heating and Function at 1.5 and 3 Tesla” http://www.imrser.org/pdf/vns_shellock_article.pdf (accessed January 23, 2015).