

## MUSIC AND THE ALTERED STATE OF CONSCIOUSNESS

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**SUMMARY.** Tourists travelling to Turkey may encounter circling (mevlevi) dervishes<sup>2</sup> in Konya, spinning in circles to achieve a kind of altered state of consciousness and enter a trance-like state of ecstasy. The world of popular music has also been inspired by the concepts of Christianity and ecstasy, and some rock bands have emerged from a combination of the two.<sup>3</sup> This altered state of consciousness is brought about by the combined effect of dance and music, which they believe can be an ecstatic experience of dual action, freeing one from the agonies and pains of everyday life. In some religions, the ecstatic and altered state of consciousness is part of ritual and worship as a power unleashed. The question is, is there a place for music-induced ecstasy in Christian worship? In this sub-chapter, we will discuss the ecstatic effect of music, the altered state of consciousness experienced as a result, and the increasingly prevalent binaural beats and music at 432 hertz.

**Keywords:** music, altered state of consciousness, ecstatic dimension, binaural beats, 440 Hz, rhythm

### The ecstatic dimension of music

Ecstasy (in Ancient Greek ἔκστασις *ékstasis*) is “a great feeling of happiness or joyful excitement, emotional or religious frenzy, a trance-like state, originally with the experience of mystical self-transcendence.”<sup>4</sup> From

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<sup>2</sup> The word is derived from the Persian word *Darwīsh* (درویش), meaning “one who stays by the door, i.e. a beggar”. Bokor József (ed.). *A Pallas nagy lexikona (The Great Lexicon of Pallas)*. <https://mek.oszk.hu/00000/00060/html/026/pc002628.html#2> (last accessed 2 July 2023).

<sup>3</sup> One example is the rock band Jesus on Extasy, which was formed in Germany in 2005. <https://tastetive.com/like/Jesus-On-Extasy> (last visited 4 February 2017).

<sup>4</sup> Stevenson, August (Ed.). *English Oxford Living Dictionaries*. <https://en.oxforddictionaries.com/definition/ecstasy> (6 February 2017).



a psychological perspective, ecstasis refers to a temporary lack of self-control (and sometimes consciousness), often associated with religious mysticism.<sup>5</sup> As a theological concept, it refers to the “rapture, the falling into a trance, the loss of self-consciousness”<sup>6</sup>, a state in which “one’s personality comes under the influence of a force outside oneself and is made a partaker of supernatural energy and knowledge”<sup>7</sup>. According to Andrew Wilson-Dickson, one of the three dimensions of music, alongside the symbolic and rhetorical, is the ecstatic dimension.<sup>8</sup> This is a topical issue to address at a time when there is still debate about what music can be played and listened to in Christian congregations. Some argue that Christian musical praise has no place in worship, because ecstatic music is counter-cultural in its genre, “*born out of the lives of African primitive tribal, magical, spiritualistic religious people, and has evolved in America into modern popular music.*”<sup>9</sup> However, if the songs in worship services and casuals are not to be disconnected from the world and the reality in which the congregation lives, they must “keep up with the times”.<sup>10</sup>

The ecstatic dimension is linked to the rhythm and pulsation of the music. The world around us is full of noises<sup>11</sup> that are repeated (for example, when walking), and we can even become in tune with them. Our relationship with rhythm has its roots in fetal life, when our first experience of music is the rhythm of the mother’s heartbeat.<sup>12</sup> This experience was associated

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<sup>5</sup> *The Free Dictionary By Farlex*. <http://www.thefreedictionary.com/ecstasy> (2 July 2023).

<sup>6</sup> Tibor Batha (ed.). *Keresztény bibliai lexikon (Christian Biblical Lexicon)*. Budapest 1993, Kálvin Kiadó (Calvin Publishing House), 336. In the Old Testament, the phenomenon of the calling of the prophets is the “ecstasy” (Is 6:1k, Jer 1:4k, Ez 1:1k, Zech 1-6), and in the New Testament, the baptism of Jesus (Mk 1:10k), the temptation (Mt 4,1kk), the story of the glorification (Mk 9,2kk), Peter (Acts 10) and Paul (9,1kk), Stephen (Acts 7,55) and the rapture of John (Mark) are also included in this category. Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> Wilson-Dickson, Andrew. *The Story of Christian Music*. A Lion Book, Oxford – Batavia – Sydney, 1992. 11.

<sup>9</sup> Gál Péter. *A dicsőítés és a keresztény rock zene (Worship and Christian rock music)*. <http://www.karizmatikus.hu/evangelizacio/dicsites-liturgia/2968-a-dicsites-es-a-kereszteny-rock-zene.html> (last accessed 2 July 2023).

<sup>10</sup> Hézszer Gábor. *Pasztorálpszichológiai szempontok az istentisztelet útkereséséhez. Elméleti és gyakorlati lehetőségek. (Pastoral psychological aspects of the search for the path of worship. Theoretical and practical possibilities)*. Kalvin János Publishers, Budapest, 2007. 30.

<sup>11</sup> Christiaan Barnard quotes Hartmut Ising, spokesman for the US Environmental Protection Agency’s Office of Water, Soil and Air Quality, who says noise is a major threat to human health. In response to a known noise, the body responds by secreting noradrenaline (a catecholamine hormone and neurotransmitter), but in response to a sudden, unpleasant noise, the body goes on alert and secretes cortisol. Barnard, Christiaan. *50 ways to a healthy heart*. ECON Ulstein List Verlag, Munich, 2000. 139-140.

<sup>12</sup> Bolyki László. *Milyen zenét szeret Isten? (What kind of music does God like?)* Álomgyár Publishing House, Budapest, 2005. 76.

with a sense of security, and it is surely the connection with rhythm that evokes this feeling. According to the main character in the documentary *István Sky*, “*the heart absorbs the vibration*”<sup>13</sup>, meaning that the sound of the environment around us is important even after birth. The human body functions according to biological rhythms, so we distinguish between rhythms that are internally driven (breathing, heartbeat, bowel movements, brain waves) and those that are externally driven (the song of certain birds).<sup>14</sup> At the same time, galaxies, planets, stars, universes, seasons, all operate according to the perfect divine rhythm. Gábor Hézser refers to sociological and social-anthropological studies of our time, which show that man is characterized by a *desire for experience*<sup>15</sup>, and that rhythm is one of the complex forms of experience. Others, on the other hand, are concerned to reject any rhythmic-musical manifestation, considering any (ecstatic) ecstatic experience dangerous to one’s spiritual equilibrium. The ecstatic dimension of music is thus lent by rhythm, and rhythm is inherent in ritual, since “*celebration is a rhythmically repetitive ritual*”.<sup>16</sup> According to László Bolyki, the two most elemental, ecstatic experiences of man are sexuality and music, having a strong rhythmic pulse.<sup>17</sup> Similar sentiments are expressed in the Song of Songs, one of the most beautiful works in world literature, in which the “*most important event in man’s life, the awakening of sexual desire and love, is openly sung.*”<sup>18</sup>

### Music and the altered state of consciousness

For the soul to descend to the depths or to the heights, a special state of mind is required, and this can be brought about by an altered state of consciousness. Various definitions have been given as to what this means. One definition is that it is a mental state in which the consciousness is somewhat focused, but at the same time somewhat disconnected from the outside world,<sup>19</sup> and there is always some lack of response to external

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<sup>13</sup> Szilárd Horváth. *Istvan Sky – Az ember, aki zenével gyógyít (Istvan Sky - The man who heals with music)*. Reportage, Hungarian, 2012.

<sup>14</sup> Détári László. *Biológiai ritmusok (Biological rhythms)*. <http://slideplayer.hu/slide/2093282/> (last accessed 2 July 2023).

<sup>15</sup> Hézser Gábor. *Pasztorálpszichológiai... (Pastoral Psychology...)* i. m. 15.

<sup>16</sup> Székely Csilla Imola. *Rítus, ritmus, zene és lélek (Ritual, rhythm, music and soul)*. In András Falus (ed.). *Music and Health*, Kossuth Publishing House, Budapest, 2016. 133.

<sup>17</sup> Bolyki László. *ibid.* 76.

<sup>18</sup> Margaret J., Kartomi. *Music and trance in central Java*. In: *Ethnomusicology*, 17. 1973/1. 167.

<sup>19</sup> Wilson, Lawrence. *Trance States – a Way to understand many People*. <http://drwilson.com/Articles/TRANCE%20STATES.htm> (2. July 2023).

stimuli. These states are most often triggered and induced by music<sup>20</sup> or psychoactive substances.<sup>21</sup> Margaret Kartoni (ethnomusicologist, Clayton Campus), examining Javanese trance music and dance, has found that the most effective music for achieving trance states is music that contains a continuous rhythm/pulsation, and that the pitch is constant over a long period of time.<sup>22</sup> Hutson Scott's research showed similar results, highlighting that strong bass frequencies in modern music, repetitive musical motifs and a steady tempo over a longer period of time are common characteristics of trance music.<sup>23</sup> The rhythm-induced ecstatic experience helps to achieve an altered state of consciousness, and this takes control over human feelings, emotions and consciousness. Some religions seek to enter a different state of consciousness by chasing these ecstatic experiences, while others consider it dangerous for man and the liturgy of Christianity and reject it.<sup>24</sup>

Sándor Gergely Szabó<sup>25</sup>, who in his doctoral thesis<sup>26</sup> discusses the issue of altered states of consciousness, approached it from a psychological<sup>27</sup>, phenomenological and receptive perspective. He has also examined the altered state of consciousness in its relation to music in the auditory driving theory, the issue of context, cognitive-emotional changes, and a phenomenological approach. In summary, he notes that he has come to the realization that the music used to induce altered states of consciousness has common characteristics such as continuous acceleration (*accelerando*<sup>28</sup>), *crescendo*<sup>29</sup>, and extreme "monotony and long duration (up to hours)"<sup>30</sup>. In examining the melody, he found that there is a lot of repetition and minimal variation, that it moves in a narrow range of notes, and that it is cyclical in that a note is sustained continuously or repeated frequently. The study also reveals that

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<sup>20</sup> Csaba Szabó, Rita Csákó and Katalin Nagy. *A zenei élmények mint módosult tudatállapot vizsgálata és összehasonlítása a transzállapot egyéb formáival (Examination of musical experiences as an altered state of consciousness and comparison with other forms of trance states)*. [http://real.mtak.hu/1055/1/43394\\_ZJ1.pdf](http://real.mtak.hu/1055/1/43394_ZJ1.pdf) (2 February 2017).

<sup>21</sup> Gábor Nagy - Pál Lovass. *A kábítószerek világa (The world of drugs)*. Medicina Publishing House, Budapest, 1985. 20-23.

<sup>22</sup> Margaret J., Kartomi. *Music and trance in central Java*. In: *Ethnomusicology*, 17. 1973/1. 167.

<sup>23</sup> Scott R., Hutson. *The rave: Spiritual healing in modern western subcultures*. In: *Anthropological Quarterly. Academic Research Library*, 73. 2000/1. 35-49.

<sup>24</sup> Gál Péter *Ibid.*

<sup>25</sup> Szabó Gergely Sándor (1987-) psychologist, Károli Gáspár Reformed University.

<sup>26</sup> Szabó Gergely Sándor *Ibid.*

<sup>27</sup> Szabó distinguishes between "spontaneously occurring, physically and physiologically induced, psychologically induced, disease induced, and finally pharmacologically induced" altered states of consciousness.

<sup>28</sup> Accelerated, gradually increase the tempo.

<sup>29</sup> With increasing force, the voices must be made louder and louder with each degree of intensity.

<sup>30</sup> [https://modosulttudat.blog.hu/2017/07/18/zene\\_es\\_transzallapotok\\_877](https://modosulttudat.blog.hu/2017/07/18/zene_es_transzallapotok_877) (2 July 2023).

for someone to enter a state of consciousness that is altered by music, it requires the individual's intention to do so and the environment. The results of neurobiological research on emotions show that *“dopamine and mesolimbic reward systems play an important role in the development of positive musical emotions and in altering cognitive processes.”*<sup>31</sup>

### **Binaural beats**

In 2008, the online portal Hvg.hu published an article entitled *“Digital drugs, infinite risk”*<sup>32</sup>, which said that those who use binaural beats are “experimenting with their brains”, as there is not yet enough scientific evidence of their positive effects. Almost ten years have passed since the article was published and a lot of research has been done on the subject. We are able to modify processes in the brain with the help of external stimuli, as binaural beats can produce the same mental results as traditional meditation practice, but much faster.<sup>33</sup>

Binaural beats are *“related to a psychological phenomenon that occurs during hearing”*<sup>34</sup>, which was discovered by Heinrich Wilhelm Dove<sup>35</sup>, a physicist and meteorologist, in 1839. More than a hundred years later, in 1973, Gerald Oster published a paper on the subject in the scientific journal *Scientific American*, which is still a reference source today.<sup>36</sup> According to the researcher, the binaural beat is a useful tool for brain research and shows how animals perceive sounds in three-dimensional space. Companies selling binaural beats have also appeared, claiming that the sound materials they sell can induce altered states of consciousness<sup>37</sup> and even sexual orgasms in response to sound.<sup>38</sup> The graph below is based on validated data from Google Trends, with the y-axis representing these results.

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<sup>31</sup> Szabó Gergely. Ibid 35.

<sup>32</sup> Bari Máriusz. *Digitális drogok, végtelen kockázat* (Digital drugs, infinite risk) [http://hvg.hu/tudomany/20080403\\_agyhullam\\_binauralis\\_utem](http://hvg.hu/tudomany/20080403_agyhullam_binauralis_utem) (2 July 2023).

<sup>33</sup> Alban, Deane. *Binaural Beats: A Meditation Shortcut*. <https://bebrainfit.com/binaural-beats-meditation/> (2 July 2023).

<sup>34</sup> Szabó Gergely. Ibid 5.

<sup>35</sup> Heinrich Wilhelm Dove (1803 Liegnitz -1879).

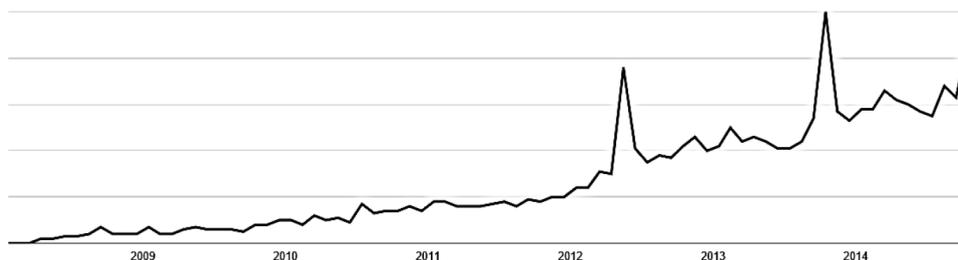
<sup>36</sup> Oster, Gerald. *Auditory Beats in the Brain. Slow modulations called binaural beats are perceived when tones of different frequency are presented separately to each ear. The sensation may show how certain sounds are processed by the brain*. <http://www.amadeux.net/sublimen/documenti/G.OsterAuditoryBeatsintheBrain.pdf> (2 July 2023).

<sup>37</sup> <http://www.i-doser.com/> (2 July 2023).

<sup>38</sup> Forrai Judit. Ibid. 163.

Hearing two sounds of slightly different frequencies (e.g. 520 and 530 Hz) and having them transmitted through the ear via stereo headphones, creates a 10 hertz auditory illusion in the brain, which gives the perception of sounds below the threshold of hearing. Listening to this frequency difference for several minutes has a healing effect, as it has a self-healing property in the case of psychosomatic illnesses<sup>39</sup>, and the interference<sup>40</sup> is not created in the air but in the brain, more specifically in the brain stem (upper olive<sup>41</sup>).

**Picture 1**



**Source: Gergely Szabó, “The role of expectations and the tone finger in the phenomenological effects of binaural beats.” 2015, PhD thesis, University of Debrecen, Doctoral School of Human Sciences, 7.**

In the following, we will review the frequency ranges examined by Szabo that are “*used in sensory stimulation*”<sup>42</sup>, such as the binaural rates of the gamma, beta, alpha, theta and delta ranges. The *gamma* EEG frequency ranges of 30-100 Hz<sup>43</sup> can be detected in healthy adults, which cannot be measured during sleep, but are re-established upon awakening. It has been reported in musicians while listening to music, but similar values have also

<sup>39</sup> Raghavan, Sandhya. *Benefits of binaural beats and how it can heal your mind and body*. <http://www.thehealthsite.com/diseases-conditions/benefits-of-binaural-beats-and-how-it-can-heal-your-mind-and-body-k0217/> (8 January 2017)

<sup>40</sup> “Interference is a physical phenomenon that occurs when two coherent waves from different sources meet, i.e. waves whose phase difference is constant”. [https://regi.tankonyvtar.hu/hu/tartalom/tamop412A/2010-0017\\_45\\_optika\\_es\\_latorendszerek/ch02s05.html](https://regi.tankonyvtar.hu/hu/tartalom/tamop412A/2010-0017_45_optika_es_latorendszerek/ch02s05.html) (30 December 2020). At some points, the “meeting waves reinforce or weaken each other”. <https://www.arcanum.hu/hu/online-kiadvanyok/Lexikonok-a-magyar-nyelv-ertelmezo-szotara-1BE8B/i-i-31843/interferencia-32466/> (2 July 2023).

<sup>41</sup> On the lateral edge of the cerebellum, an oval swelling rises under the bridge (pons), the so-called *olive*.

<sup>42</sup> Szabó Gergely. *Ibid* 41.

<sup>43</sup> “1 hertz is 1 oscillation, wave period, occurring in 1 second”. [http://www.trimagus.hu/wp-content/uploads/2018/03/Illoolajok\\_frekvenciaja.pdf](http://www.trimagus.hu/wp-content/uploads/2018/03/Illoolajok_frekvenciaja.pdf) (30 December 2020).

been measured during Buddhist meditation.<sup>44</sup> These frequencies have been used effectively to reduce headaches.<sup>45</sup> The beta frequency ranges (15-30 Hz) can be recorded in the waking state and have been associated with a longer-term increase in academic performance in healthy students. One study reported a positive outcome using beta range programs to improve mood.<sup>46</sup> The alpha range (7-12 Hz)<sup>47</sup> was found to improve cognitive function, reduce anxiety<sup>48</sup> and prevent burnout (often used in conjunction with beta frequencies), the theta range (4-7 Hz)<sup>49</sup> to promote meditation and hypnosis, and the delta range (0-4 Hz)<sup>50</sup> to reduce headache symptoms and anxiety.<sup>51</sup> Szabó also details short- and long-term studies on cognitive performance, stress and anxiety, mood and depression, pain control and headache with binaural beats, summarizing research results from 30 minutes to several months.

According to Szabó, the mechanism of action of binaural beats has not been proven beyond reasonable doubt, so further research is needed to clarify “*what frequency ranges can be used, with what results, and under what conditions.*”<sup>52</sup>

#### 440 Hz or 432 Hz?

In 1953, the International Organization for Standardization (ISO) approved the tuning of the single-line octave “a” to 440 hertz. According to a conspiracy theory, the conversion of the music from 432 hertz to 440 hertz was ordered by Joseph Goebbels, the Nazi propaganda minister<sup>53</sup>, who could thus make German soldiers more aggressive. The a<sup>^</sup> tone is 432 hertz, also known as the “*Verdi alternate tuning*”. According to scholars, the a<sup>^</sup>

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<sup>44</sup> Travis, Fred. Are all meditations the same? Mindfulness, Tibetan Buddhism, and TM. <https://www.tminfo.hu/tudomanyos-tudatkutatas/minden-meditacio-egyforma-a-mindfulness-a-tibeti-buddhism-it-a-tm/> (January 19, 2017).

<sup>45</sup> <https://www.youtube.com/watch?v=axTlmgHP9Ts> (2 April 2017).

<sup>46</sup> Berg, Kathy and Siever, Dave. *A Controlled Comparison of Audio-Visual Entrainment for Treating Seasonal Affective Disorder*. In: *Journal of Neurotherapy*, 13. 2009/3. 166-175.

<sup>47</sup> [https://www.youtube.com/watch?v=\\_Wmzw4d7qpg](https://www.youtube.com/watch?v=_Wmzw4d7qpg) (2 March 2017).

<sup>48</sup> According to Bánfalvai, “*words cannot penetrate anxiety. You can only reach the edge.*” In Attila Bánfalvai. Osiris Publishing House, Budapest, 1998. 125.

<sup>49</sup> <https://www.youtube.com/watch?v=66tq9xji0xA> (2 March 2017).

<sup>50</sup> <https://www.youtube.com/watch?v=JnhFsHyeeNQ> (4 March 2017).

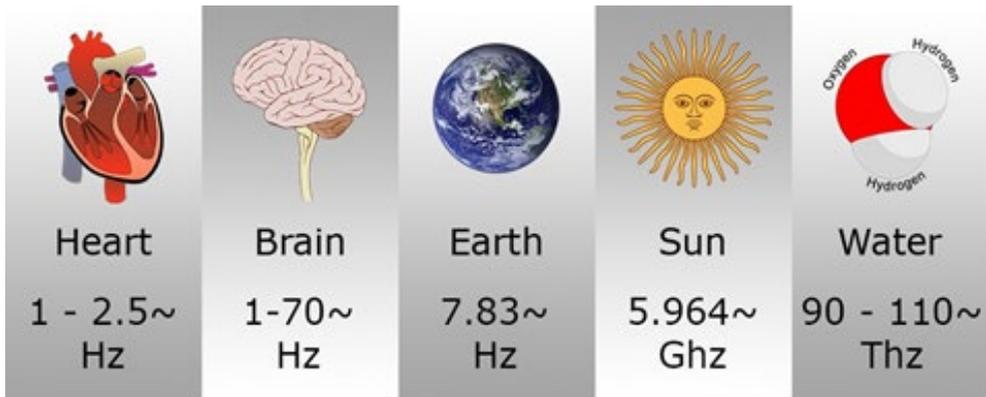
<sup>51</sup> Szabó Gergely. *ibid* 42-43.

<sup>52</sup> *Ibid.* 54.

<sup>53</sup> Marian, Jakub. *The 432 Hz vs. 440 Hz conspiracy theory*. <https://jakubmarian.com/the-432-hz-vs-440-hz-conspiracy-theory/> (2023. július 3.).

note of Orpheus' lute still sounded at this vibrato in France at 435 hertz, while an 18th century English tuning pipe sounded at 380 hertz.<sup>54</sup> Proponents of the 'Verdi tuning' argue that the frequency of DNA replication, the magnetic vibration between the earth's surface and the ionosphere,<sup>55</sup> is 8 Hz (7, 83 to be precise), because if „a<sup>^</sup> is positioned at 432 hertz, all the other notes in the scale correspond to whole tones, multiples of 8". Thus, by listening to a pitch of 432 hertz, we are in harmony with the world and with ourselves.<sup>56</sup>

Picture 2



Source: Assaf Dar Sagol: „*Music Theory: 432 Hz Tuning – Separating Fact From Fiction.*”

<https://ask.audio/articles/music-theory-432-hz-tuning-separating-fact-from-fiction>

Some people thought to discover the dark forces, Satan himself, in the 440 hertz tuning<sup>57</sup>, which appeared in the world as the enemy of humanity and confuses it, tipping it into disharmony. The 432 hertz pitch, however, brings healing, aligns with the earth's magnetic field, and thus brings our souls into harmony, as it helps to reorder our DNA. Leonard Horowitz (Harvard University, behavioral science expert) writes in his study, “*The music industry uses this frequency with its prescribed characteristics to ‘steer’ people toward greater aggression, psychosocial agitation, and this ‘emotional stress’ predisposes*

<sup>54</sup> Csepelyi Adrienn. *Verdi a nációk ellen (Verdi against the Nazis)*. <http://nol.hu/kultura/verdi-a-nacik-ellen-1583847> (3 July 2023).

<sup>55</sup> The upper atmosphere is the region of the atmosphere ionised by solar radiation, starting at an altitude of 80 km above the surface.

<sup>56</sup> Ibid.

<sup>57</sup> Grannum, Gillian. *The A=440 Hz Frequency: DNA Tuning and the Bastardization Music*. <http://www.shiffrequency.com/curious-case-of-432-vs-440/> (2023. július 3.).

people to physical illness.”<sup>58</sup> According to him, 440 Hz is nothing more than the Rockefeller Foundation’s military-commercial music, which makes the population more aggressive, and people more prone to emotional distress, to physical illness. With this in mind, the author calls for a “*musical revolution*” to enable the world to evolve, and for health and peace to take over through the sound frequencies of healing music.

To conclude, the 2009 documentary film *Kymatica* makes the relevant point: “*the rediscovered knowledge of the science of sound shows that sound is something more than a mere vibrational signal, that sound not only interacts with life, but sustains and develops it. It acts as a channel of conscious intention between people, societies, and entire civilizations.*”<sup>59</sup>

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<sup>58</sup> Horowitz, Leonard G. *Musical cult control: The Rockefeller Foundation’s War on consciousness through the imposition of A=440 Hz standard tuning*.  
<https://steemit.com/440hzconcertpitch/@tonefreqhz/musical-cult-control-the-rockefeller-foundation-s-war-on-consciousness-through-the-imposition-of-a-440hz-standard-tuning-part-3>  
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<sup>59</sup> Stewart, Benjamin. *Kymatica*. Documentary film, USA, 2009.

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