Cláudia Miranda

Tones of Colors and Sounds

Harp Therapy Shades

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I dedicate this book to my father, Otacílio Miranda, and to my mother, Maria Helena. They presented me with the harp I call Yonah and both are my clients in weekly sessions of harp therapy. My eternal gratitude for being their daughter and for the opportunities they gave me.

I thank specially to dear Walter Boechat Gomide, for the constant companionship and support in my tasks, and to my dear friend and teacher Christina Tourin, for all the inspiration she brings to me. My gratitude, also, to all the teachers, students, clients and friends with whom I am always in a continuous learning process.

Summary

Preface for the English version

By Christina Tourin, director of the International Harp Therapy Program (IHTP).

Often synchronicities, the meaningful coincidences we experience, seem merely a lark or a twinkle from the cosmos. In *Tones of Colors and Sounds,* the reader becomes fascinated how opportunities lead Cláudia Miranda to the events in her life to become the spokesperson and trained professional to lecture and promote therapeutic harp music. Following one's inner voice is not always easy especially when it involves trusting that the Universe will provide while pursuing the education and appropriate people to bring new developments in the world to one's own country. I picture Robert Frost hovering over Claudia whispering "Two roads diverged in a wood, and I took the one less traveled by and that has made all the difference."

Her study of the history of therapeutic music unfolds now in modern day settings of children's hospitals, universities, places of support and in the sweet Brazilian orphanages. The inspiring sounds of the harp wafting through the halls of institutions bring people closer to their reason for living. It gives them hope, strength, and courage to lift above the fray. Learning how to TRUST and follow the directions given to us can build us into beacons of light for those in need around us. Touching lives each day, Claudia's life still holds many synchronicities and outreaching opportunities to come, for the heavens are not only winking, they are blinking with each string of compassion that she

bestows upon patients with her harp. Indeed she is a 'harp specialist" - or rather is that "heart specialist?"

As a colleague in the same vocation, our paths have been have been led onto uncharted waters – across countries and oceans. Bringing the history of healing with the pure sounds of the harp back from Ancient times is indeed the revival of a lost art that should never be forgotten again.

Preface for Portuguese Version

By Melyssa Pinheiro, harp therapist and holistic therapist, with Music therapy and Art therapy certificate by IEK of Berlin and in Positive Psychology by North Carolina University (USA).

I received with great affection and gratitude the invitation to make the preface of this pioneer work that comes to unveil horizons of possibilities of the harp therapy and that by its multidimensionality and transversality I recommend to therapists and health professionals, music, music therapy and art therapy students, and other interested parties who wish to deepen their self-knowledge with sounds and colors.

Cláudia Miranda was the introducer of harp therapy in Brazil, has solid professional experience in the area, and is harp and harp therapy teacher. Despite the difficulties of implementing the harp therapy in Brazil, unknown by most people and in a country that the music therapy still has little space, the author has come to develop notable job in hospitals, wards of children and adults, hemodialysis and chemotherapy rooms and ICUs in Belo Horizonte and producing innovative, recognized internationally research papers - of which I can highlight her research with hemodialysis patients, which resulted in a scientific article that was published in the *International Harp Therapy Journal* and presented at the San Diego International Harp Therapy in 2015.

As a harp therapist, I too encounter these difficulties in Rio de Janeiro. Institutions still are not sensitized to the importance of practicing integrative medicine that enhances the healing process and reunite professionals from many areas, creating productive synergies. For example, they are still few institutions like hospitals, schools, maternities, nursing homes, prisons, and others in Rio de Janeiro that have a music therapist, and many times the role of the music therapist is mistaken for the entertainer's, which shows the need to publicize and inform, showing the benefits proven by science. Therefore, it's a work that demands a lot of dedication, affection, persistence and creativity, and this work comes to an

invaluable contribution, showing that not only researches that prove its effects, but also in a way that sounds and colors, either with the harp, wither with other instruments or voice, can be used to provide more well-being, health and self-knowledge to people.

I come from a different reality. I graduated in Germany, where the request for music therapists by the institutions is already bigger than graduated people in that area. Monthly I keep receiving e-mails of job advertisement looking for music therapists for clinics, hospitals, schools, nursing homes, and others. Public and private hospitals have multidisciplinary teams with music therapists, art therapists, psychologists, psychiatrists, and others, which develop differentiated plans of conjunct action to suit the needs of each patient. The State covers that, which means there are no additional costs to the people, and even private appointments are reimbursed by the government, because it is considered that the person has the right to choose the type of therapeutic monitoring that he or she wants to receive.

In Austria, at the Technical College of the town of Krems, public, it's offered the Music therapy course, focusing on the harp, lute or guitar, and they are very crowded and prestigious courses. Their work in hospitals in Vienna is having great impact on the production of researches and international articles. The music therapist profession in Austria is recognized and regulated by a council.

In Brazil, the socioeconomic and political conjuncture is quite different. If by one side there is openness and curiosity of the people about harp therapy and music therapy, by the other their knowledge and acknowledge is almost nonexistent, which complicates its expansion and introduction.

This is a pioneer work not only for being the first one in Portuguese about harp therapy, but for its approach and suggestion of practices adapted to the reality and cultural aspects of the country, integrating the Brazilian folklore, thus creating a Brazilian harp therapy, which opens doors to other instruments and chant.

Throughout the reading of this book, the reader is led to know what is harp therapy, its origin, indications, how it can be used, and can make use of the music, sound, colors and multidimensional energetic tuning exercises, either with the harp, either with other instruments or with the voice for self-knowledge or for enrichment of one's therapeutic practices with pregnant women, babies, children, adults, seniors, mourning situations and hospitals. Although some exercises are transcribed in music sheet form, and

deepen musical aspects such as character or the Greek modes' *ethos* and pentatonic scales, the book is written in a didactic and pleasant way, with many colorful graphics that facilitate the understanding of the contents. The musical knowledge is presented in a clear way and with explanations that allow laypersons to understand, and that professionals can take advantage and encouragement to explore the therapeutic and deeper side of music or to relate it with other areas such as architecture.

We live in a time of transition that is awakening a new paradigm. Whether in education, health, economics, politics, architecture or in other areas, this new paradigm has in common the importance of integrating realities that reflect the multidimensional nature of the human being. The limits of different specialties are being called into question, expanded, and it's developing the transdisciplinarity, so all these dimensions can be integrated and connected. The apology of disharmony of the modernity, in music and art, reflecting chaos and dissonance, has generated malaise. Today the harmony is being sought again, through subtle sounds, tranquilizers that help people to reconnect with themselves, with their paradise lost inside and the universe. And quantum physics is clarifying with its findings these mutations and realities that used to be impossible to prove. The renowned Brazilian scientist and physicist Francisco di Biase developed the holoinformational theory of conscience, in which everything is information and defends that it generates conscience, which generates energy, which generates matter, which brings a new light to the perception of the human being and the new paradigm. This book is in my opinion a valuable contribution framed in this vision of new paradigm to the harp therapy, music therapy, art therapy and holistic therapies.

1 - Introduction

The harp sound played with healing intention creates a loving sound cradle and can promote deep changes over the body, emotions, mind and spirit, providing welfare, plenitude and reconnection with the own essence and the universe.

I met the therapeutic harp movement in 2005 at a lecture given by Christina Tourin (International Harp Therapy Program director) at the IX World Harp Congress in Ireland. Back then, I had studied the instrument for just 2 years and had just left a communitarian life experience. I had intended to deepen my studies on the harp to bring more harmony and peace to the world. The meeting with Christina opened me to a new portal in my life. I first started studying therapeutic harp in the IHTP (International Harp Therapy Program); continued to study the harp with Myriam Rugani and then with Marcelo Penido. I studied musical theory and attended many music courses, such as the Anthopomusic course and half the Chant Therapy course by the Desvendar da Voz (Uncovering Voice) school, and with German and Brazilian teachers. I attended chorals, did recitals, collaborated with activities in a musical development center and taught in a school of musical education. My main course of study however was graduating in Music Therapy at UFMG. I was in the first class of newly created bachelor degree of the Music School. I made partnerships with singers and with harpists and attended a harp master class for Brazilian music with Cristina Braga. With all these studies, I made a progressive transition from my profession as an architect, illustrator and designer to the music and as a therapeutic harpist.

The use of music for therapy dates back to prehistory, and the harp, is one of the oldest known instruments had been used for healing ever

since the beginning of time. The harp dates back to the very early times to the hunter with a string on a bow. Over time additional strings were added to create different tones. The harp is universally known as a gift from the gods to the humankind. Hearing or playing this instrument is said to connect heaven and earth. Many people do not know the difference between the harp, lyre, psaltery, and zither.

On the harp, the strings are attached perpendicularly to a triangular shaped sound box and are plucked with the fingers of both hands. On the other instruments, the strings are attached parallel to the sound box. The origin of the harp and the lyre may have been concomitant. The first harp came from a string attached between a tree and the ground. The sound box was the very planet Earth. It was also called 'string tree'. Its myth is linked to Apollo's bow and arrow, since the myth of the lyre is linked to the strings that Mercury (or Hermes) put on a turtle's shell and gave it as a gift to Apollo.

There are records from the prehistory of instruments of one single string (seemed like a berimbau). In caves, the sound of the primitive harp is believed to be used with a relaxation purpose. Shamans played it to contact the world of the spirits, to have revelations and to feel connected. There already were harps and lyres in the ancient civilization of Ur.

Buddhist monks and the ancient Chinese people considered string instruments to be inspiring to meditation, and to play them was a purification ritual. To them, string instruments' music helped to heal melancholy and to regulate heartbeats, promoting a healthy life.

According to Egyptian mythology, the god Bes, protector of homes, played the harp. It represented important role to the Egyptian people during life (on fertilization rituals), on death (on funeral rituals), and, as believed by them, on life after death.

Low reliefs from Mesopotamia and Greek sculptures also attest to its use on these cultures. Pythagoras[1] taught how to use certain notes,

[1]Pythagoras of (Greece, 571 or 570 BCE –or BCE) was a philosopher and mathematician. To him, the number and the proportion founded the universe. He transmited the concept of Music of the Spheres. Boethius (Italy, 480 – 525) based on Pythagoras to distinguish three music genres: cosmic

chords, melodies and modes to induce physical responses on the human body. He studied the repercussion of music on behavior patterns and healing processes.

In the Judeo-Christian tradition, it is mentioned the use of the harp and similar instruments such as the lyre, kinnor, nevel and the psaltery. Biblical stories describe that with his harp, David soothed King Saul.

Back in the middle ages, in monasteries, music had a significant healing role. It was considered a type of sanctification, a projection of the divine spirituality capable of touching and moving souls. In many Christian cathedrals, there are many stained glass windows with representations of harps being played by angels. Still in the middle ages, it was also used in the music of minstrels and troubadours, played with the plectrum or feather tips.

Peoples of the forests of Gabon, in Africa, believe that the sound of harp is capable of communicating with spirits. They are called bwiti, are human shaped and are cared as living beings. There are also used the koras, string instruments similar to a berimbau with many strings.

In Burma, or Myanmar, on Asia, these instruments are boat-shaped and richly adorned. They have an important role to that people and are intrinsically linked to spirituality.

Phoenicians first introduced the harp in 1260 BCE on the Irish coast. On the Celtic mythology (people of Indo-European race that, for centuries, has spread throughout central Europe, reaching Gaul, Iberia and Britain) Angus Mac Og, the god of youth, love and beauty, had a golden one that produced music of irresistible sweetness. The presence of the harp in the Celtic culture is undeniable, so that Ireland made the instrument as one of its national symbols. It was recognized as a symbol of Ireland since the thirteenth century. The prehistoric hill of Tara, located in Ireland, became the mythical center of the island around which the major political and cultural events were held, and it originated the famous song "The Harp through Tara's Halls". These

(unknown by humans), human (mix of soul and body) and the practical music created by instruments and voices.

peoples keep myths of fairies and invisible worlds that can be contacted through the harp sounds. The Celtic religion derived from the rituals of the druids, which had the respect to Nature and the belief in immortality as basic principles. They believed in a Mother-Supreme and in the power of the four elements (air, fire, water and earth), therefore, they linked themselves especially to trees. By their religious background, they considered that spiritual beings could inhabit wood musical instruments such as the harp, allowing them to sound.

Christianity came to the British Isles in the fourth century, blended to the Celtic culture, amalgamating symbols, habits and instruments. This Celtic Christianity evolved differently from the Roman pattern, arranging itself in a clear monastic system. The monk Saint Columba first introduced the harp in a Christian context. He was Irish, founded several monasteries in Britain, especially the one in the island of Iona, Scotland, and used to compose music for harp. In Wales, around the eleventh century, it was not considered polite one who did not know how to play the harp or did not at least have one at home. In the fifteenth and sixteenth centuries, the performer could change the frequency of the sound of each string halftone up by pushing it with the thumb of one hand while pinching the instrument strings with the fingers of the other hand.

When musicians started to use polyphony, harpists began to use both hands and created a harp with two rows of strings, later called chromatic harp, which made it possible to play a modulated melody with accompaniment. This kind of instrument had a row of strings in diatonic scale (like the white piano Keys) and another row with accidented notes (sharps and flets – as the black piano Keys). Thus, it was possible to make different modulations in the songs, that is, change the tonality, adding accidents with great freedom, on melodies and harmonies.

In the seventeenth century, the Tyrolean invented movable clips, also known as levers, which were triggered manually for changing between keys on the song, which were widely used by minstrels. In 1720 the musician and luthier Jacob Hochbrucker created a pedal system that made it clearer the way to modulate (change from one

key to another), turning a natural note string into sharp or flat, depending on the need. He created, therefore, the simple movement harp, which allowed each string to produce different sounds raising a semitone. During the eighteenth century the instrument became fashionable throughout Europe, mainly in Germany and France. Later on, Érard perfected the system and presented the modern pedal harp of the orchestras. Henriette Renié, famous French harpist, prompted a dispute between two harps manufacturers, the House Pleyel (chromatic harp with two rows of crossed strings) and the House Érard (harp pedals). Debussy composed the *Sacred and Profane Dances* without any glissandos and using many chromatisms, for the Pleyel; and Ravel composed the *Introduction and Allegro* with many modulations and could only be played on the diatonic pedal harp of Érard. The chromatic harp was gradually falling into disuse and pedal harp became official in orchestras. Later, Renié adapted the Debussy's piece to the pedal harp.

Today, the Celtic harp was reborn in countries and regions where it originated, such as Ireland, Scotland, Britain and France, and its use has spread throughout the world. Many people use it to play folk music, in the so-called new age music or for therapeutic care.

During the British occupation in Ireland, the use of the harp was banned because it represented a strong element of nationalism. The extinction of this tradition led many harpists to immigrate to Spain. From there, it was brought to Hispanic America by Jesuit priests, where it had its own development, especially in Paraguay, Mexico (among the Aztecs) and Colombia. So Latin American harps, known as Paraguayan, are similar to the Spanish harps of the seventeenth century, with very robust sounding board - which, in turn, derived from the Scottish harps. They came to America not at once, but at different times throughout the colonization, mainly brought by Catholic priests to teach the Indians how to make instruments. The harp did not have much development in Portugal, which is why it did not come to Brazil in colonial times. In general, the teaching and learning of playing the harp in Latin America is made by ear. The technique is different from those used in both classical and Celtic. For the Latin harp, it is used to play with nails and there are endless types of soundings and specific rhythms of folk music, such as tremolos,

arpeggio patterns, etc. It is officially the instrument of Paraguay, country where there is more of them in the world. It is very common to see people on the streets carrying these instruments. The expression *arpa índia* is not correct to identify the Paraguayan harp, since it does not have influence only over natives, but also – and mainly – over settlers. In Mexico, it is known the *Veracruz* harp, also called *arpa jarocha*, which has the sounding holes on the back, while other types of Mexican harp has the holes on the front. On Venezuela, there is the *arpa llanera* or *criolla* (harp of the plains) and the *arpa aragüena* (harp of Aragua and Miranda). They are often formed small instrumental groups where the harp plays with a kind of guitar called the *cuatro*. Colombian harps are similar to Venezuela's. In Peru there are many unique musical rhythms to it, such as the *huayno* in 2/4. There is the *arpa indígena* and the *domingacha harp* (a version of the *cuca-arpa*). In some festivities, they are carried in processions in the inverted position. There are also harps in Ecuador and Chile. The South of Brazil was influenced by neighboring countries and there also exist Paraguayan harps. On the rest of the country, this instrument is unpopular, though. That is because the Portuguese music (as fado) and Brazilian music have many modulations that the diatonic harp limited the musical expression. The pedal and key ones allow modulating songs to be played, though. Therefore, there is an increasing number of people interested in harp in Brazil today. The harp therapy is very new here, it is now only starting.

Music therapy has existed as a profession only in the 20th century. It got formal after World War I and World War II, when amateur and professional musicians came to play for hospitalized veterans suffering from physical and emotional trauma. Remarkable physical and emotional responses of the ill to music led the doctors and nurses to request the hiring of musicians by the hospitals. Soon it was evident that the hospital musicians needed some prior training - and so was born the academic systematization of music therapy. The use of music with therapeutic intent also became common in prisons and psychiatric hospitals.

Ever since the 70-80's a group of pioneer harpists like Georgia Kelly, Joel Andrews, Christina Tourin, Laurie Riley, and Sile Harris started using harps in hospitals and hospices, restoring their therapeutic role.

Ron Price, co-founder of the Healing Harps, began working with sensitive boys who became more concentrated as they studied the harp.

Therese Schroeder-Sheker, harpist and singer, founded the Chalice of Repouce, thanatological music group or palliative care. The work of music for palliative care is inspired by the Benedictine monastery Cluny in France, where pilgrims were staying with serious illnesses, who came to be treated before they die; and by the work of Cicely Saunders in the late twentieth century. Sarajane Williams, a psychologist and harpist, founded the VAH - Vibro Acoustic Harp Therapy, for patients with chronic pain, using live music played on the harp associated with sound transmission process for a cushion, chair or bed, making them vibrate and act as physical massage on the patient. She also founded the Harp Therapy Journal. Christina Tourin and Laurie Riley started using the harp therapeutically. In 1984, Christina created the Harp Therapy Program, while Laurie Riley created the Program for Certificated Therapeutic Musicians (working in general at the bedside). In the US, the National Standards Board for Therapeutic Musicians is a council that gives certificates to various musical therapeutic practices, each with its specificity. It was founded by Stella Benson, Lynelle Edelson, Melinda Gardiner, Cynthia Price Glynn, Dee Sweeney, Laurie Riley, Mona Pack, Christina Tourin, Betty Truitt and Sarajane Williams.

In 1994 Christina Tourin went to a sacred place called Glastonbury Tor in England and was given a vision of the International Harp Therapy Program. So she created it then with the goal of enabling all hospices and hospitals in the USA to have a harp player for every facility.

Christina Tourin came to Brazil in 2011 and in 2013 on my invitation and plans to come again in 2017. I had the opportunity to participate in a meeting of therapeutic harp practitioners on the Isle of Iona in Scotland in 2013 and then at the International Conference in San Diego, CA in 2015. I played with over 100 practitioners and presented my research on the Use of the Resonant Tone in Hemodialysis. I was able to meet with excellent professionals with whom I made bonds of friendship at the Conference. Some of these people were Maria Emilia Gagnaten from Argentina; Ann Dowdy, an American currently living in

Ecuador; Ting Lau from Hong Kon; Alix Colin from Belgium; Liesbeth Schroen from the Netherlands; Bay Deane from England; Rachel Christensen, Beverly Tyack, Bambi Niles, Ginny Oman, Estelle Day, Tami Briggs, and Barbara Crowe from the USA. I also met Sue Raimond (USA) who works with therapeutic music with animals.

Christina has long supported our work, so much that she allowed me to open a harp therapy course in Brazil this year of 2015, which is now in her list of affiliate programs around the world. I started organizing the course that consists of modules and information to pioneering students. In my practice I have to make several adjustments to our reality. So I have decided to write this book and to share the uniqueness of opening the consciousness and recent research in the effects of therapeutic music in Brazil. This gives us the opportunity to adapt and be creative in our own program. I realize that we are building a new way of thinking about the power of music on the human body and our fole not just as therapists. We must also be educators, communicatory, informants so that the Brazilian people can know about the benefits and the power that music brings to listeners. I recently met Melyssa Pinheiro, who is also bringing therapeutic harp music to Brazil and is introducing it in Rio de Janeiro. We have been collaborating our educational backgrounds to strengthen this goal of educating this fast growing field around the world, which offers harmony, relaxation, self-knowledge and an opportunity to discover valuable resources in oneself.

2 – Harp and symbols

Creativity is thinking up new and productive ways of doing things. With love of learning and open stance to reflect and look at things from different points of view, we can develop a healthy interest in useful knowledge.

The spinal column and the rib cage have similar structure to the harp. The shape of the instrument relates to the entire human body, vertical, resting on the floor. The harpist aligns his or her spine with the column of the harp and supports it over the right shoulder. To play it, one uses both hands and both cerebral hemispheres. The human body looks like a harp: the nerves come from the spinal cord similarly to strings and they vibrate when they receive sensory stimuli.

Harp strings being attached perpendicularly to the sound box gives the instrument great capacity of resonance, especially at distance. Its sound vibrates through the air and the ground.

The strings are plucked in the middle of its length, what enhances the production of the harmonics of the eighth. The sound of the harp follows precise mathematical laws; its acoustics is near to the purest sounds. The first harmonics of the harmonic series are more emphasized, have stronger presence, complementing the sound of the fundamental note - and the proportion of them follow the order of the harmonic series, unlike other instruments (such as the clarinet, which has the odd harmonics more emphasized, or the oboe, which has the even harmonics more emphasized).

In cultures where it has been used, the harp was associated with metaphors of nobility, spirituality, angels, gods and fairy myths, devas, sirens. In the imagination of humanity, it is associated with communication powers between the physical and nonphysical world and it is considered particularly suitable for the moments of physical death. According to reports from people who have been through near-death experience, the known sounds that most closely match the sounds heard during subtle experiences are the sounds of the harp.

The harp is often considered almost a body extension of the harpist himself; in a way, in the learning process of learning to play the instrument, the person increases the possibilities of activity of his or her body vehicle, besides the own voice, one begins to use other sounds and timbres. Up to the point of showing themselves on the profile picture next to a harp.

The use of that instrument within the therapeutic context is especially performed in hospital environments due to the soft sound that helps in relaxation. According to researches, the musical experience affects the perception of pain. If the person is focused on an instrument, singing or listening to music, neurotransmitters that lead to the brain pain message are occupied and the painful feeling is softened, since it is difficult to focus on two things at once. The body produces serotonin relievers of its own pain, norepinephrine and endorphins, which can reduce or block the pain signals. The therapeutic use of the harp can promote distraction, facilitate expression, favoring the perception to deal with emotional issues, minimize pain, lead to understanding of death, and in some cases can cause the patient to sing along and to have hope.

The harpist Marcelo Penido Silva, who was my teacher, in his doctoral thesis *Harp Symbolism*, at the Indiana University, had the idea to study the harp relations as a bridge between the earth and the spiritual worlds as well as the personification of death. According to him, this was an unusual interpretation, since the harp appears linked

predominantly to the angels and heaven, in general. His research showed that many respondents consider the harp a beautiful instrument, magical, angelic, of divine sounds, which provide relaxation.

According to Roger Cotte in the book Music and Symbolism - Cosmic Resonance of the instruments and the Works, the harp is associated with the sun, the sun god and fire. He also states that the harp could be symbol of clairvoyance, because of their Lynx casings strings, which is an animal that has extraordinary night vision. The Fathers of the Church attributed to the harp, because of its shape, the symbolism of the heart. It is the evocation of the reflection of the macrocosm of the microcosm. It is also assigned to it the value of a sign of serenity, courage and joy of the soul chosen by God.

Harp in therapy

Using music in a therapeutic way can create inner balance in our lives, aligning ourselves to greater universal harmony, the harmony of the spheres mentioned by Pythagoras, Socrates, Plato and Aristotle[2]. They studied the lyre and wrote about the effects of modal music on the human psyche. The seven lyre strings originated the musical modes, related to the principles of sacred geometry, whose intervals between notes have mathematical relations. The Greek term for these modal characteristics or effects is *ethos*. The different musical modes could balance the individual, providing a "tune" with the cosmic harmonies. The Renaissance philosopher, physician, pharmacist and Catholic canon Marsilio Ficino[3] was head of the Neo-Platonic Academy in

[2] Socrates (Greece, 469 BCE - 399 BCE), Plato (Greece, 428 BCE - 347 BCE), and Aristotle (Greece, 384 BCE - 322 BCE), studied the effects of modal music on the human psyche, relating the modal characteristics of musical intervals to the people's character or their ethos.

[3] Marsilio Ficino (Italy, 1433-1499) is a representative of the Florentine Humanism. Played the lyre using a combination of old modes of Orpheus hymns, so that body's diseases could be cured by sympathetic resonance between the individual and the music. He re-introduced the Pythagorean

Florence. He played the lyre for his patients (especially for problems of depression) using a combination of scales or old modes while singing the hymns of Orpheus, the great heavenly lyrist in Greek mythology. For him, body's diseases could be cured by the resonance between the individual and the divine harmony music. The idea was to tune the spirit to receive the most beneficial inflows to the patient. In his writings, it emphasizes that it is the intention of the delivery of the song that is of utmost importance. The harp therapy is based on these ideas.

The harp promotes care and comfort through interaction with the therapist. Using the Harp portal as a tool has the intention of giving a gentle sound cradle to help in times of emotional, physical and spiritual stress (see *Cradle of Sound – Harp Therapy Manual*, by Christina Tourin). The main areas addressed are breathing, anxiety, fear, pain and depression. This form of therapeutic care is being used in rehabilitation and terminal hospitals to help to promote homeostasis, bringing mind, body and spirit to a state of unity. Harp therapy is not entertainment or musical atmosphere. It is not a parallel concert. By giving total attention, present and inclusive, to every patient, breathing patterns are accessed that are reflected in stress relief signs in the body and expression. When patients are connected with pressure devices the effect that music brings them can be verified by monitors. Live music performances are different from recorded music because live music is totally related to the patient and can be changed at any time. It is unique, individualized to the need. When a prepared professional plays an acoustic instrument like the harp it can promote improvements to different patients, because then there is a more direct match between the status of health and mood, the conditions and characteristics of patients with the music. He can improvise; modify the rhythm, tempo and expression to direct the music to the client. In addition, the sound of the harp, which has relations of harmonic proportions based on precise mathematical laws, can provide a state of listening, attention, cognitive, emotional and spiritual openness in patients. It can

idea of the harmony of the spheres, also studied by the astronomer Johannes Keppler (Germany, 1571-1630), which determined the musical intervals of each planet.

stimulate babies' sensory organs, developing awareness, rhythmicity and neuronal connections, bringing relaxation to patients, families and staff professionals, promoting interest both for its aesthetic beauty as for its sound.

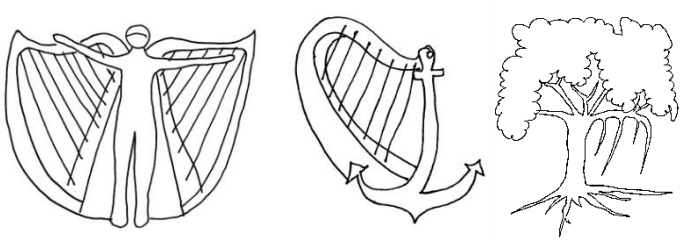
Music is more effective if performed in silence, especially during moments for those who are in hospital care. The music helps family members and health professionals as well as patients. The sound of the harp has the ability to structure, to shape archetypal models, as well as relax and create a welcoming, peaceful and joyful atmosphere. Played with curative intent, it can lead a person to reconnect with one's own essence, which knows its own destiny and purpose in life. Thus, the harp is an instrument to be considered valuable in music therapy. The professional must learn when and how to use it, as much as how and when not to use it.

Harp Symbologies

The sounds of the harp can represent angels' messages (from "gods", guides, hierarchies, mentors, helpers). They provide opening to intuition, inspiration, spirituality and can bring comfort. They can also represent the connection with heaven, the afterlife (before birth and after death), the angelic dimension of light, wisdom, joy, tranquility, peace. They can boost confidence feelings in beings that protect us and have a bit of a mystery, secret; they seem to come from a spiritual world.

Its shape resembles wings and the feeling of being able to fly with lightness, subtlety and freedom, as in lucid dreams. It can also symbolize a grounded, rooted anchor. Counterbalancing with celestial

symbols, the symbol of the anchor can bring balance. The primary harp came from a tree; it is linked to the origin of everything, from Earth to Cosmos. It is connected with nature and its healing potential. Its sounds resemble elementals of water and air, they resemble to myths and fairy tales, mermaids, magic.



The instrument can bring feelings of beauty, charm, harmony, gentleness, kindness, nobility. Animals and plants show welfare as they hear its sounds, dogs and cats relax, plants become more vitalized.

Its curves resemble the shape of the human body, especially the female body. As opposed to the feminine symbolism, it can remember the bow of an archer with his clear target, his self-control, courage, strength, and thus it may represent a masculine aspect. It can also refer to images of groups that meet in a circle with enthusiasm. Bards, poets, minstrels and artists participated in a communication network using the harp. Its column relates to the spinal cord. It symbolizes alignment, order, precision, mathematical laws and harmony of proportions.

In group work with students or patients sometimes I ask them to imagine a energy harp in front of them and to try to touch it. For this, a gesture of a hug is needed. To play or to listen to the harp can help to develop love, the energy of the heart. Stringed instruments promote feelings of warmth, compassion, kindness, care, therapy, inclusive attention. If the person wants, he or she can use these symbols to make analogies with universalist states of consciousness and send love to where there is need in the world, altruistically. One can stay in peace and harmony and enjoy the moments with the music to be conscious, lucid, present in the here and now, fully. And let oneself to notice a bridge between worlds and dimensions.

3 - Relations between conscience and energetic vibes

It is essential to wonder. Enjoying the beauty opens the heart to gratitude and hope.

There are basically two realities in the universe: the energy[4] and the conscience. Air, water, food, visual images, sounds, smells, thermal, tactile and taste sensations are energies in varying degrees of density that influence each being in a unique way. Consciousness manifests itself in different degrees of energy: immanent or consciential. The immanent energy is present throughout the cosmos, throughout the universe (on land, water, air, fire, minerals, plants, animals, the cosmos). It permeates, nourishes and forms the whole universe and all beings that inhabit it. The consciential energy is the immanent energy absorbed, modified and externalized by beings that are able to feel and think (animals have consciousness and humans have self-awareness). Human senses are not only the five known ones. Rudolf Steiner[5] lists 12 senses:

1) Life: general disposition, well-being or malaise, little perceived as it is considered a vested right, gives notion of the life process;
2) Movement: internal perception that members of the body move together;

[4]Energy is usually defined as the capability to produce work or to promote changings. There are many forms of energy: potential, kinetic, chemical, electrical, thermal, radiant. The Special Theory of Gravity shows that energy and mass are interchangeable according to Einstein's equation E = mc2.

[5]Rudolf Steiner (Austria, 1861 - Switzerland, 1925) was a philosopher, educator, founder of anthroposophy, Waldorf education, biodynamic agriculture, anthroposophical medicine and eurhythmy.

3) Balance: more noticed when its interrupted, in cases of dizziness, gives the relation between up, down, right, left;
4) Smell: Basic perception of the external world;
5) Taste: greater contact with the outside world, experience of the intrinsic qualities of the world's flavors;
6) Sight: Increases contact with the world and the internalization, surface image;
7) Heat: intimate relationship with the world, experience of the inside of the perceived object;
8) Hearing: reveals the internal configuration of the outside, through the sound we know the material, hearing body;
9) Word: the sound becomes meaningful;
10) Thought: perception of the thought behind the word;
11) I: feeling of unity with the other.

The universe is made up of multiple dimensions and states. Human consciousness uses different vehicles to manifest itself in the physical, energetic, emotional, mental and other even broader levels. In physical waking, the vehicles are coincided. In life outside the physical plane (extraphysical), when consciousness is projected in lucid dreams or when the physical body died, it occurs discoincidence between the vehicles of consciential manifestation, leading it to manifest itself in multiple dimensions beyond the physical dimension.

The vibrations occur throughout the universe, from the slower vibrations to the fastest, since the matter, infrasound, tastes, smells, sounds (all sound scale), ultrasound, radio waves, microwaves, heat waves , infrared waves, visible light waves (the entire color spectrum), ultraviolet, x-rays, gamma rays, until it reaches the extraphysical energy.

Schematically it would be like this (the denser levels below, the subtler levels above):

Extraphysical energy
Gamma
X-ray
Ultraviolet

Visible light
Infra-red
Heat
Microwave
Radio Waves
Ultrasound
Sound waves
Odors
Flavors
Infrasound
Matter

We can represent in detail the frequencies of the various energy levels as the following:

Hz (vibration per second)	**Energy**	**Octaves**
10^{24}-10^{+}	Extraphysical	
10^{19}-10^{24}	Gamma rays	
10^{16}-10^{19}	X-rays	
10^{14}-10^{16}	Ultraviolet	
10^{14}	Visible light	
	Magenta	2
7, 6. 10^{14}	Violet	1
	Purplish blue or bluish violet	
7, 3. 10^{14}	Indigo blue	
6, 8. 10^{14}	Sky Blue	
	Greenish blue or blue-green	
6, 2. 10^{14}	Green	
	Greenish yellow or yellowish green	
5, 7. 10^{14}	Yellow	
	Yellowish orange or yellow-orange	
5, 1. 10^{14}	Orange	
	Orange red or reddish orange	
4, 6. 10^{14}	Red	
4, 0. 10^{14}		
10^{12}-10^{14}	Infra-red	
10^{11}-10^{12}	Heat	
10^{8}-10^{11}	Microwaves	
10^{4}-10^{8}	Radio Waves	
10^{4}	Ultrasound	
10^{1}-10^{4}	Sound waves (audible 20Hz to 2000Hz)	
3951, 0	B	7
3729, 3	A # or Bb	
3520	A	

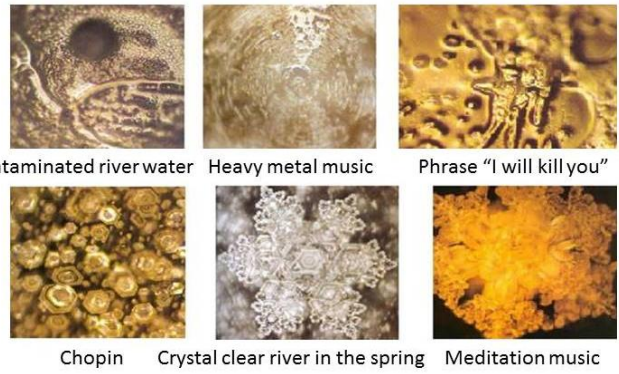
3322, 4	G # or A b	
3135, 9	G	
2959, 9	F # or G b	
2793, 8	F	
2637, 0	E	
2489, 0	D # or Eb	
2349, 3	D	
2217, 4	C # or D b	
2093, 1	C	
1975, 5	B	6
1864, 6	A # or Bb	
1760	A	
1661, 2	G # or A b	
1567, 9	G	
1479, 9	F # or G b	
1396, 9	F	
1318, 5	E	
1244, 5	D # or Eb	
1174, 6	D	
1108, 5	C # or D b	
1046, 5	C	
987, 7	B	5
932, 3	A # or Bb	
880	A	
830, 6	G # or A b	
783, 9	G	
739, 9	F # or G b	
698, 5	F	
659, 3	E	
622, 3	D # or Eb	
587, 3	D	
554, 4	C # or D b	
523, 3	C	
493, 8	B	4
466, 1	A # or Bb	
440	A	
425, 3	G # or A b	
391, 9	G	
369, 9	F # or G b	
349, 2	F	
329, 6	E	
311, 1	D # or Eb	
293, 7	D	
277, 2	C # or D b	
261, 6	C	

246, 9	B	3
233, 1	A # or Bb	
220	A	
207, 6	G # or A b	
195, 9	G	
184, 9	F # or G b	
174, 6	F	
164, 8	E	
155, 6	D # or Eb	
146, 8	D	
138, 6	C # or D b	
130, 8	C	
123, 5	B	2
116, 5	A # or Bb	
110	A	
103, 8	G # or A b	
97, 9	G	
92, 5	F # or G b	
87, 3	F	
82, 4	E	
77, 8	D # or Eb	
73, 4	D	
69, 3	C # or D b	
65, 4	C	
61, 7	B	1
58, 3	A # or Bb	
55	A	
51, 9	G # or A b	
48, 9	G	
46, 2	F # or G b	
43, 6	F	
41, 2	E	
38, 8	D # or Eb	
36, 7	D	
34, 6	C # or D b	
32, 7	C	
	Odors	
10^{1}	Flavors	
	Infrasound	
	Matter	

The sound energy directly affects the liquid and gaseous chemical processes of the body. Sound waves propagate both in the air as in the liquid mediums; they are transferred by compression and decompression, so their speed depends primarily on the elasticity of

the middle. In water, the velocity of sound is four times greater than in air. The sound plasmates shapes, such as Masaru Emoto[6] demonstrated as he researched the effect of sounds and thoughts in the formation of water crystals. Researches such as the effect of sounds in particles made by Chladni[7] in metal plates and updated by researches of modal phenomenons (renamed as *Cymatics*, by Hans Jenny)[8] showed that fine particles move as they are excited by a sound vibration and assume geometric patterns. Thus, the human body, comprising 70% liquids, receives important Influences perceived by the hearing and tactile senses.

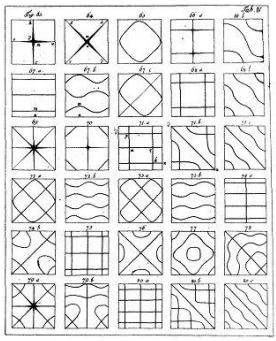
These are images of Emoto's water crystals, the Chladini images and the cymatics:

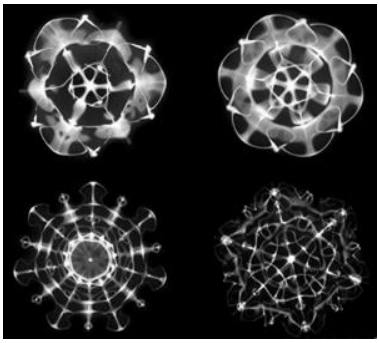


[6] Masaru Emoto (Japan, 1943-2014) was a photographer and Japanese author, performed experiments with water, subjecting it to human thought.

[7] Ernst Friedrich Chladni Florenz (Germany, 1756-1827) was a German physicist and musician. Investigated the vibration plates.

[8] Hans Jenny (Switzerland, 1904-1972) was a doctor and natural scientist, studied the wave phenomena.





Colors

Light, Sound and Shape are energies and frequencies. The colors registered in the brain from the transmission of optical pulses appear in the mind as a response to light frequencies. The brain analyzes the data it receives and creates an image of what is out there to be seen. Illuminated bodies absorb radiated frequencies and emit additional frequencies. So a perceived object in green is absorbing frequencies of other colors. Also listening to sounds is an interpretation made by the brain to the vibration of air molecules. So does the olfactory, gustatory and tactile experience, the senses show the world as if it were solid, but it is energy in different degrees of vibration.

If we look at the spectrum of light, we detect very high frequencies ranging from infrared to ultraviolet. At the same time, observing the sound spectrum we get much lower frequencies that go from infra-bass tones to ultra-sharp ones. The sound is a vibration denser than light, and matter, in turn, is an even more dense energy vibration.

The chakras are energy centers in the body. Generally, seven chakras are recognized in the physical, an eighth and a ninth in the energy body. There are several interpretations of the relationship of the chakras with the music. The most common associates the chakras in ascending order with the notes of the diatonic scale (7 notes) and the rainbow colors. However, there are authors who consider that there are 12 chakras in the physical plan and one in the energy plan, which can relate to the chromatic scale, with emotional states, feelings and thought patterns:

Chakra	Note	Color	Atributes
	C + higher octave	Magenta	Detachment, unconditional love
Coronary	B	Violet	Connection with the universe, idealism
Frontal (back)	A# ou B b	Purplish blue	Transcendence, multidimensionality
Frontal (front)	A	Indigo blue	Compassion, self-connection
Nuchal (back)	G# ou A b	Clear blue	Patience, tranquility, relaxation
Laryngeal (front)	G	Greenish blue	Tenderness, pacifism, fullness
Cardiac	F# ou G b	Green	Well-being, kindness, serenity
Palmars	F	Yellowish green	Hope, balance, understanding
Splenic	E	Yellow	Energy, strength, spontaneity
Solar Plexus	D# ou E b	Yellowish Orange	Interest, expansion, knowledge
Umbilicus	D	Orange	Vision, intelligence, optimism
Sexual	C# ou D b	Orange red	Joy, good mood, participation
Plantar	C	Red	Confidence, courage, vitality

Musical relations

A musical composition resembles an architectural design, both use mathematical laws, modules and harmony relations. The more intentions there are as one composes and designs, the more aspects one wants to cover, the more complete will be the resulting product. An architect who simply draws the basic physical spaces required by the client limits his work to purely practical functions. But those who are looking to observe other elements, in addition to meet the functional demands (of spatial dimensions, circulatory flows and economic resources) will be able to expand the service and the

usefulness of his work. The architecture was not only made to house the human being, giving him a roof to protect him from the weather, neither only for his life to be more practical and comfortable. The architecture can provide "shelter" to more subtle aspects of being, to sensations, feelings, interactions with energy and consciousness. We can make a "musical" study of architecture as an element to relate space and human life in its physical, psychic and spiritual aspects. Humans also need symbolic spaces that indicate directions and reproduce deep impressions. The mathematical accuracy creates an order mesh behind the forms and it acts subtly, causing the feeling of harmony and well-being. Conversely, it is also possible to study the musical relations by geometric and architectural perspective.

Music

Music came from nature. From the sound of waves crashing on the sea, the thunder, the wind and the animals. Human beings have learned to distinguish the different tones produced by natural phenomena, and with that, began to imitate them through body movements and their own voices.

The singing probably came as a manifestation of emotions (eg, crying and laughter) a way to draw the group's attention and motivate it to carry out an activity that needed to be done together, with the imitation of other animal sounds. According to some researchers, the singing appeared before the speech.

Musical Instruments originated from the need for men to communicate during hunts, to warn of danger and communicate with other tribes.

Some cultures used to relate music to something divine, a gift given by the gods. Others associated it with the cosmos and the movement of the stars.

Music had and still has an educational, artistic, therapeutic, religious, economic, political, social and cultural role. The musical styles of ancient and modern peoples reflect their character and temperament, being related to the geography (climate, topography) of where they live and showing their level of development, values, thoughts, feelings, activities and energy standards. The rhythmic, harmonic and melodic characteristics

of the music, the voices and instruments used, as well as dances and ornaments associated with it reveal significant data of the people who compose, perform or just enjoy it.

In different ways, almost all people relate to music. Even those with hearing problems can have some contact with the sounds, either through devices or by vibrations they perceive by touch. There are few people who have little or no relationship with music - among these are those with amusia, a neurological problem that incapacitate a person to recognize musical sounds. But in general, sound and music are a living and present part in the lives of most beings. There are several ways to relate to music: listening, singing, playing instruments, studying the theory. Often people begin studying music and then give up because they could not find a method that suits his/her way of learning and therefore end up thinking that studying music is very difficult.

The study of music should be simple and natural like the learning of speech for babies. The idea that you need a special gift to study music is not real. Anyone, in any situation and at any age, can begin studying music, needing only will and disposition to practice. The person may not come to be a concert performer but will learn something. With a regular workout, (little time a day is enough), neuronal connections are formed in the brain and new potential bloom. The musical study develops discipline, perception, hearing, relations of many orders, coordination. The right and left sides of the brain are stimulated largely because music both develops exact mathematical skills and emotional skills.

Music exists to fulfill several aims, all linked with time, as listed below:

- **Universal time – cosmic or timeless:** some songs were created with the purpose of connecting human beings with the transcendent reality, intending to invoke protection, inspiration, guidance. They can be requests and / or offers in the form of meditations, prayers, cults, rituals, trances, myths, magic, religion, exorcism. They can also be forms of gratefulness, blessings, cures, therapies, peace irradiation, universalism, fraternity, contact with the multidimensionality.
- **Planetary Time (mundane)** – cyclical seasons (year, month, day, time): other songs are meant to follow works of basic need and

survival (such as harvesting, hunting, making of tools, crafts, clothing, food, housing, objects).

- **Group Time – social events:** in human history can be identified proper music for war, to tell the story of the people and their relationship with their ancestors, for narrative representations, opinion demonstrations, protests, ideologies claim, catharsis (bacchanalia, carnival, collective ecstasy, rebellion, cultural rules release), dances, and also for ambiance (such as music used in restaurants, offices), and marketing (supermarkets, shops).
- **Human time:** music accompanies every stage of human life, from fertility rites and pregnancy, with lullabies, to the nursery rhymes in childhood; from the songs related to adolescence, youth and maturity, songs for significant passages, celebrations, wedding, awards, honors, to the preparation of music for the death, burial and mourning.
- **Individual time:** some songs serve as expressions of personalities to outsource impulses and sensations (sexual desire, pleasure, anger, envy, partying, irreverence, domination), feelings (love, passion, joy, sadness, anger, abandonment, rejection, friendship), reflections (opinions, information, ideas), and manifest individual temperaments (extroverts, introverts, unstable or stable).
- **Evolutionary time:** therapeutic music can help overcome negative traits, helping in the rehabilitation and transformation of weaknesses and deficiencies; in preventing, improving and strengthening skills, and in the maintenance and improvement of the achieved balance.

Musical elements

At the Anthropomusic course held by OuvirAtivo, coordinated by Marcelo Petraglia, musical elements are studied from its archetypal relation with numbers. Here in this book I got a little inspired in this form of study and structured various musical knowledge, didactically for beginners and very synthetic for those who already have some information. In item number 1, which represents the totality, we study the music as a whole; 2, which represents the duality, we will study the

two basic aspects of music that are Tone and Time; 3, which represents the triangle, we see the three main elements of music: melody, harmony and rhythm; in item 4, number of the Earth, of the base, there will be the four major musical properties: pitch, intensity, duration and timbre; in item 5 we will present the pentatonic scale, of 5 tones; in item 6, the voices; at 7, the diatonic scale of 7 tones; at 8, we will see intervals and octaves; at 9, the harmonic series; in item 10, the musical writing; at 11 instruments; in 12, tonalities; 13, resonance; and 14, other elements.

1) Music is the intentional ordering of sounds and silences that is perceived as an unit because it is possible to play it, sing it, listen to it and have the feeling of being touched by it at the same time.

2) Tone and **time** are the two main formative elements of music. As yang and yin, heat and cold, day and night, the tone and time are as Apollo and Dionysus, conscious and unconscious, form and formless, order and volitional impulse, perfection and improvisation.

Tone: It is the exact vibrational frequency that gives it pitch and melodic contour. The tone is objectively recognized by a particular frequency, it requires a cognitive action to be determined. Sound is more generic than tone; it is any vibration perceived by the auditory system and has subjective quality. Note is the graphic record of the tone. Technically, a noise is the mixture of undefined sounds. Noise is perceived by the sensory impression.

> **Sound:** Physically is a wave (or set of waves) propagating in the air with a specific frequency. In the range of 20 to 20,000 Hz, the human ear is able to vibrate at the same rate of sound waves, capturing the information about the frequencies and producing neural sensations, to which the human being gives the name of Sound. The waves with very low frequency sound in the ears as bass, and sounds with high frequency sound as treble.

Time: It is what gives the fluid process of the way the music moves and lasts. The perception of the human being over time signatures is closely linked to his cyclical processes, such as walking, breathing and the pulse of the heart.

Pulse: In the flow of time there is a regularity, a cyclical constancy as a kind of a walk where there is a support and a forward movement. These repetitive supports present in music are called pulse. Pulses can also be divided in the ratio of ½, 1/3, ¼, etc.

Bar: Groupings of pulses are called bars. There may be measures that group 2, 3, 4, 5, 6, 7 or more pulses. In general, they are sub grouped into 2 or 3 pulses. Bars of two pulses (one strong, one weak) are called binary, and have a similar movement to the march. Bars of 3 pulses (strong, weak, weak) are called ternary and have a circular motion similar to the waltz dance. Bars of 4 pulses are called quaternary. Bars of 2, 3 and 4 times are the most common. There are also bars of 6, 8 and 9 times, which are called compound bars, they work as if they were bars of 2, 3 and 4 times respectively, but each time is divided into 3 times. There are many other measures and ways of combining them, but these are the most used.

Tempo: in music, pulses may have different speeds: *lento*, *presto*, *prestissimo*, etc. In general, tempo references come at the top of the music sheet, written in Italian. Music can follow a regular flow or there may occur time variations, accelerating or delaying some parts, opening space for the extension of time of a note (*fermata*) or returning the flow (*a tempo*).

Metronome: It is possible to use a tool to set the pulse, which sounds like a regular watch. This device is used for study only, so the musician can adjust himself and train. After he incorporates music within himself, it must flow with life.

3) Melody, **harmony** and **rhythm** form a triad of elements in music. Like think, feel and want; head, chest and members or neurological system, respiratory - circulatory and metabolic - motor.

Melody: It is the flow between tones, with sounds and silences that follow a linear sequence with its own identity. It expresses an idea through instruments, voices, or coupled to lyrics, in songs, being able to strengthen relations with poetry.

Phrase: It is a coherent melodic idea that outlines a gesture.

Harmony: Relation between tones when they sound together, forming chords. It is like the scenery or environment where music is manifested.

> **Chords**: when tones sound at the same time, they interact and create a quality, which can bring feelings of sympathy or antipathy to the listener, creating feelings of stress and / or relaxation.
>
> ***Arpeggio***: It is a chord whose notes are played separately and in sequence ascending or descending in a very short time from one to the other, creating a fluid motion from a succession of harmonious sounds. The *arpeggio* is widely used on the harp.
>
> ***Glissando***: sliding sounds of a scale. It is also widely used on the harp, its effect is very special in that instrument.

Rhythm: Ordination of long and short sounds in various proportions, which use the reference of the pulses, subdivisions and bars for support. The cerebellum, part located just below the brain, is the responsible organ for the rhythmic regularization of the human body. Cortical and thalamic structures synchronize the rhythm and finger movements. Thus, the rhythm is an intrinsic part of the body, since the rhythmicity is biological.

> **Greek rhythms**: The ancient recorded a few rhythmic cells of combinations between short (u) and long (__) sounds: dactyl __uu; anapest uu __; anphibrach u__u; spondee __ __; tribach uuu; trochee __u; iamb u__; pyrrhus uu; cretic __u__ and choriamb __uu__

4) Pitch, **intensity**, **duration** and **timbre** are the four musical properties. They form components set as the cardinal points, the elements (fire, air, water and earth), the seasons (summer, spring, winter and fall), the temperaments (choleric, sanguine, phlegmatic and melancholic), the kingdoms (human, animal, plant and mineral), states (waking, dreaming, sleeping and death).

Pitch: It concerns fine tuning. The frequency or number of vibrations per second of a tone determines it. Higher frequencies correspond to higher pitch, and lower frequencies to lower pitch. Note that by high or low it does not refer to volume, but the defining characteristic of the note.

Tuning: It is agreed that the A has 440 Hz, from it, the frequency of the remaining notes is established, considering that they have a conventionalized proportion to each other. At other times of the past, there were other conventions to the pitch of notes. Depending on what we need to play, we can vary the pitch. For example, in certain therapeutic studies, it can be used A in 432 Hz, that is, slightly lower, to provide less stress on the patient.

Intensity: concerns the expressivity, the phrasing. It corresponds to the amplitude of the sound waves, determined by weaker or stronger volume. It is represented by dynamic signals so the interpreter can follow the composer's instructions.

Dynamics: It is the variation of expression of one song. The word piano comes from the Italian and it means smooth. Thus p = *piano* = soft sound; f = *forte* = strong. The music can be made from *pianissimos* (ppp) to *fortissimos* (fff). One can make *crescendos* and *diminuendos*, and many other dynamic variations.

Duration: shows the regularity or irregularity of the flow, shows the sound production time, if it is short or long. In musical writing, it is represented by figures and these are associated with numbers (whole note - 1, half note - 2, quarter note - 4, eighth note - 16, sixteenth note - 32, thirty-second note - 64 and sixty-fourth note - 128). Figures have proportion relations: the whole note is worth double the half note, the half note is worth double the quarter note, the quarter note is worth double the eighth note, and so on, in a way that between them there is a mathematical relation in which, for example, if the whole note is worth 1 beat, the half note will be worth ½, the quarter note, ¼, the eighth note, 1/8, the sixteenth note, 1/16, the thirty-second note, 1/32, and the sixty-fourth note, 1/64. Depending on the song, the figures change their duration, but their proportions are always the same.

Timbre: It is the material clothing of the sound and its color. Just as each person has a unique voice, the timbre defines the fundamental character of the sound of each instrument - and that is directly related to physical aspects, such as the nature of the material the object that sounds is made of, or the shape of the physical body of the singer (gender, culture and age influence the timbre).

5) Scale: Scale is a sequence of successive and different notes that show increasing or decreasing variations of pitch. There are scales of different amounts notes. There are exotic scales. The pitch of tones range from the lowest, infra-audible, up until the super-high, ultra-audible. The possibilities of tones are endless. It is as if the entire audible spectrum was some kind of sound ramp that slides from the lowest tones up until the highest ones, in a great glissando. If we had these tones in an imaginary curve, we would notice that, cyclically, certain tones of the higher part of the "ramp" have similarities with tones that are located below. This similarity can be measured by the number of vibrations, or frequency. A frequency that is in proportion of double or half of the other one is said to be the same tone in different octaves. Between octaves, the "sound ramp" is divided into seven steps, each corresponding to a tone, called diatonic notes, known as C, D, E, F, G, A, B. These 7 note cycles overlap each other filling the entire audible spectrum. Making a visual analogy, it is as if we saw several overlapping rainbows, composed of seven colors, but the ones located lower down have darker shades and those located above have lighter shades, therefore, the low rainbow has a dark red and the top one has a light red. Both colors are the same, but in different subtlety degrees.

It also occurs with notes and their relationship to octaves. The distance between these steps or notes can be a tone or a half tone. The western scale can also be divided into twelve equal halftones. Since it is conventionally only 7 names of notes, the other five notes on the twelve halftones division will receive the same note name located below it plus the word "sharp" (the # sign, which indicates that the note is halftone higher the previous) or it will receive the same note name located above it plus the word "flet" (with the signal b to indicate that the note is half step down the next one). Thus we have: C, C# or Db, D, D# or Db, F, F# or Gb, G, G# or Ab, A, A# or Bb, B. Note that between E and F there is only half tone, so E# is F and Fb is E. The same happens between B and C. B is C# and Cb is B. In Eastern music, the division of this "ramp" is made otherwise. There are further divisions called micro tones. Between two tones there are nine subdivisions called comas. Halftones of the modern Western scale are between the 4th and 5th coma. The other tones of the semitone and whole tones are not used in the West.

The piano is an instrument that shows the scale in a very visual form. In it, the white keys correspond to the notes of the diatonic scale (C, D, E, F, G, A and B) and the black notes correspond to accidents (C# or Db, D# or Eb, F# or Gb, G# or Ab, A# or Bb).

Graphically, in exact locations of the staff, the rhythm is shown in the drawing of the figures (whole-note, half-note, etc., indicating duration). If we draw the figures lower on the staff, we represent lower sounds, and to represent the higher notes, we draw them above. Figures should always be drawn on lines or spaces. When writing a scale in a staff, notes are positioned in sequence, line, space, line, space. To the left of the staff it is necessary to draw the clef indicating the reference of a basic note. To determine whether a tone is natural (no accident), the rule is only to draw the figure for natural sounds - or, if it is sharp or flat, draw a # in front of it for sharp sounds and draw a b in front of it for flat tones. The staff may have symbols of # or b after the clef to indicate the tones. In that case, if, for example, there is a # sign in the place that corresponds to F in front of the clef, so every time that an F appears in the song, it should be # and not natural. There is a sign called natural (§) that cancels the value of a flat or a sharp placed in front of the clef, making that note that natural again.

Pentatonic scale: It has five tones, as the 5 elements of Chinese medicine, the archetype of certain flowers, the vowels, the archetypal man. In the pentatonic scale there are used only 5 notes between the 7 ones of the diatonic scale. Chinese medicine lists the five elements (wood, metal, earth, fire and water) with organs (liver, lung, spleen, heart and kidneys) and the notes C, D, E, G and A (F and B are not used). Although, in music played on the stringed instrument Kantele, D, E, G, A and B are used (F and C are not used). This type of pentatonic is considered very balanced and suitable for children up to 9 years old. There are several ways to use the pentatonic scales.

6) The **human voice** is the accessible musical instrument to almost all humans. There is a difference between male and female vocal folds and that's what basically distinguishes the sounds of voices between genders. Male vocal folds become thicker at puberty due to the action of hormones, making the voice of the guys drop an octave

after puberty. Women's vocal folds do not suffer such evident thickening - so, after adolescence, female voices drop only a third or a fifth. Men can use their falsetto, for performance of high notes or "false female voice". Among women, those with higher voices are called sopranos and those with lower voices are the altos. Among men, we have the voices of tenors, baritones and basses. Still, there are men with very high voices, called countertenors, and women with medium range voices, called mezzosopranos.

Speaking scope: The air that enters by inspiration provides nutrition to the aerial part of the body, the air that exits by expiration often is set by the speech. By speech, internal content of our body are transformed into audible phonemes. The singing and speech have a common origin, it is not known which came first. Some primitive people had sung speech. Probably the singing came to communicate about transcendental things and the talking to communicate about practical matters. When we speak, consonants and phonemes have more expression, and when we sing, vowels gain importance. The phonetic element is important to educate breathing with plastic movement, from outside to inside. The exercise of singing should be done in different time from speech.

Singing scope: The voice is the most creative musical instrument. It has great power to touch our lives and the others'. With our voices and words we can assist the others. The more we learn to unite breath, mind and voice, the more energy we have in life. The voice is the expression of the spirit and character. Our thoughts influence the quality of the vocal sound in its timbre, melody, dynamics and rhythm. Our voice can change color, can acquire more resonance, power and spirit. Each voice represents a unique personality and has individual character. It has two predominant tones: the natural tone and the habitual. If these two tones differ, the voice is being underused. We should develop our frequency of natural voice, without the veils we put over it. All beings are musical, that is something intrinsic to nature. The singing can be directed to vibrate in different regions of the body, such as the back and the top: head voice and falsetto; in the middle part: middle voice; on the front and bottom: lows. These vibratory regions are also called records. The records have different auditory, muscular, acoustics and aerodynamics reality. Everyone has passage zones that may be more or less evident through record breaks.

Vowels[9] (carry the tone): Vowels depend on a muscular configuration of throat opening and forming a container mouth or sound cavity. They open an internal space. The vowels are pronounced from intimate experience; they need oral space and reveal the soul experience par excellence.

A: the oral cavity opens downwards, tones the kidneys, the solar plexus and the stomach.

E: the oral cavity extends laterally on canine teeth; the vibration of the sound is stronger. It relates to the larynx and bile.

I: the airflow is projected; tones lungs.

O: image of the point and the circle, it acts on the liver.

U: cylinder-shaped mouth, relates with the bones.

AU: the airflow is projected from top to bottom and then forward, relates with the heart.

EI (ai): relates with the reproductive organs, brain and skin.

The [ng] is not a vowel or consonant. It is the vital flow of sound. It is a mantric sound of the sound stream, which babies have.

Consonants (structure the shape): Consonants bring sounds of the world around us. For every consonant, there are sounds of animals, insects or noises that can serve as sound images. Why are all languages different? Why do not we speak only with vowels? The difference of languages is the consonants that relate to the geography, nature and environment of each people. The consonants have no resonance space in the oral cavity, but have articulation points from which impulses are emitted out. The consonants can be fricatives (voiceless or voiced): labiodental – F V W; inter-dental – S, Z; pre-palatal – X, CH, Y, J; laryngeal – H; flap –

[9] Translator's note: The mother tongue of the author is Portuguese; therefore, the vowels and consonants herein apply to sounds of that language.

R; lateral – L. Consonants can also be stops (voiceless or voiced): labial - P B; dental - T, D; Nasal - M, N; laryngeal - K, G.

7) The **diatonic scale** has seven notes, as the days of week; it represents a cycle, the colors of the rainbow, the flow of the manifestation.

Modes: The modes are specific ways to form scales with seven tones that have distinct relations of steps and half steps, giving each one certain characteristic that relates directly to the kind of humor that it will give the listener. If the modes start with a whole step, they are considered major; and if they start with half steps, they are considered minor. Their "color" or their "way" and character depend on how steps and half steps are positioned. There are also relations between the Greek musical modes with light and dark feelings.

Musical note: It is a term used to spell the minimum element of a sound, the tone, formed by a single mode of air vibration. Thus, every note corresponds to a duration and is associated to a frequency. The notes names (Do, Re, Mi, Fa, Sol, La, Si) has their origins in medieval choral music. It was Guido d'Arezzo, an Italian monk, who created this system of naming musical notes - called the solmization system. Six syllables were taken from the first six sentences of text of a hymn to St. John the Baptist, where each phrase sung a degree above the scale. The opening sentences of the text (whose translation is: *For thy servants may sing the wonders of your wonderful deeds, absolve the faults of their unclean lips*) are the following: *Ut queant laxis, Resonare fibris, Mira gestorum, Famuli tuorum, Solve polluti, Labii reatum*. Later, Ut was replaced by Do, and it was added the syllable Si, as shorthand Sante Iohannes ("John"), thus forming seven notes in the diatonic scale.

8) Intervals: A musical interval is the relation between the frequencies of two notes. They are classified as concurrency or not of the sounds and the distance (pitch) between them. In Western music, intervals are studied from the diatonic scale divisions. The intervals units of measurement are the tone and semitone (step and halfstep). The interval of unison is the same repeated note (e.g. C-C), the second interval is a distance between two notes (for example, C-D); The third interval is the distance between three notes (for example, C-E), the

fourth interval is the distance between four notes (for example, C-F), the fifth interval is the distance between five notes (for example C-G), the sixth interval is the distance between six notes (for example C-A), a seventh interval is the distance between seven notes (for example, C-B), and the octave interval is the distance between a note and itself at twice its frequency (for example middle C, of frequency 261, and high C, of frequency 522). Intervals can be melodic (formed by successive notes) or harmonic (formed by simultaneous notes). Can be perfect - P, major - M, minor - m, augmented - a, or diminished - d. The unison (same note interval), the octave (a note with the same note one octave higher), the fifth and fourth are considered perfect intervals.

> **Consonance:** It provides a sense of rest and stability, with conclusive character. Can be perfect (p1, p8, p5 and p4) or imperfect (3M, 3M, 6M and 6m).
>
> **Dissonance:** movement and tension, unstable character, may be neutral (4A or 5d), soft (7m and 2M) or strong (7m and 2m).

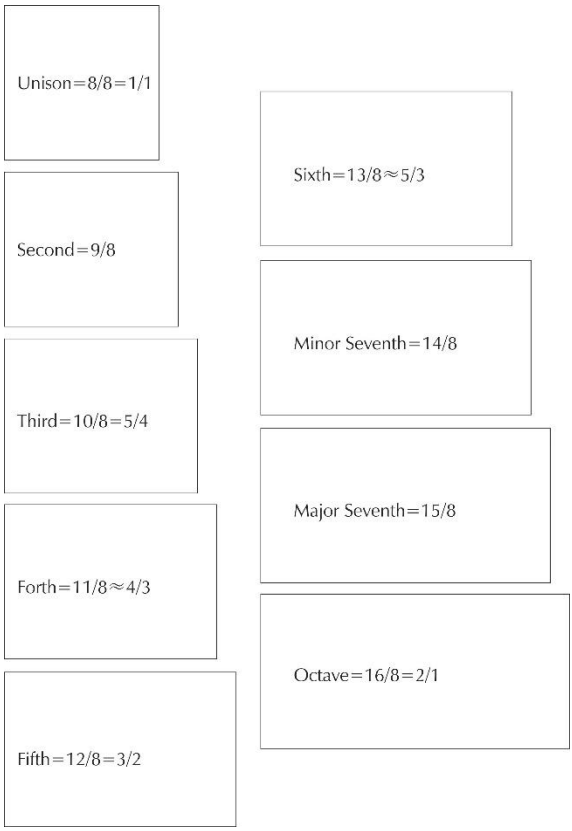
Musical interval	**Mathematical proportion**	**Feeling**	**Consonance or dissonance**
Unison (same tone)	8/8 = 1/1	Balance, stability, unity.	Perfect consonance
Minor second (½ step)		Beginning of movement and duality, tension and expectation.	Strong dissonance
Major second (1 step)	9/8	First step toward something new.	Smooth dissonance
Minor third (1 ½ step)		Relationship with the other, but more towards yourself.	Consonance
Major third (2 steps)	10/8	Relationship with the other, but more turned out, it is the personal side of the human experience.	Consonance

Perfect fourth (2 ½ steps)		Beggining of the opening, rationality, first clash between the internal and external. World revelation.	Consonance
A Fourth or d Fifth (3 tons - triton)	11/8	Friction, tension, inconclusion. *Diabulus in musica*.	Dissonance
Perfect fifth (3 ½ steps)	12/8	Skin, wrap, limit, protection, breathing scope, spacious as the sky, feeling of being at home. The ascending 5th: it is like a question of a child, open and perplexed before the world; and the descending 5th: is a response.	Perfect consonance
Minor sixth (4 steps)	13/8	The wrap was broken, possibility of going beyond limits, but with certain nostalgia.	Consonance
Major sixth (4 ½ steps)		Harmony and joy, a sense of hope and excitement.	Consonance
Minor seventh (5 steps)	14/8	Experience of being out of your own mind, breaking.	Strong dissonance
Major seventh (5 ½ steps)	15/8	Relation with the outside, a greater degree of tension and movement, needs to be resolved.	Smooth dissonance
Octave (6 steps)	16/8	Union with the own super-personal aspect.	Perfect consonance

9) Geometrical correspondence: There are, behind manifestations, exact mathematical laws. The same harmony laws rule the visible and audible worlds and the ancients already knew the relation between architecture

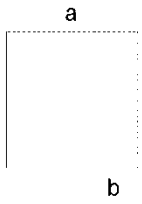
and music. There is a Goethe's phrase: "*Architecture is frozen music*", which means, the visual proportions are crystallizations of sound proportions.

The musical intervals can be represented by fractions, and those can be represented geometrically. If we write all intervals keeping the denominator of 8 and then drawing the rectangles corresponding to the fractions we can have a two-dimensional visual match to the relation between two musical tones.



The golden rectangle that originates the Phi number, the *Divine Proportion*, is related to the 6th interval. The golden law says that *the smaller is to the larger as the larger is to the whole*, and that can be expressed mathematically.

$$\frac{a}{b} = \frac{b}{a+b}$$



$$b = a + x$$

$$\frac{a}{a+x} = \frac{a+x}{a+a+x}$$

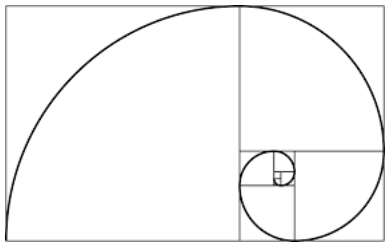
Se $a = 1$

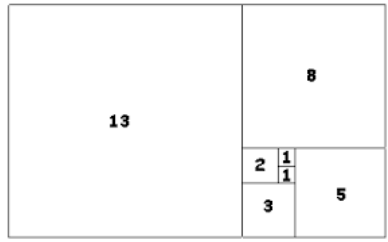
$$\frac{1}{1+x} = \frac{1+x}{1+1+x}$$

$$x^2 + x - 1 = 0$$

$$x = 0{,}618$$

The Fibonacci[10] spiral is a sequence of numbers, where the number 1 is the first and second term of the order, and the rest are sourced by the sum of its predecessors: 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, 987, 1597, 2584, 4181. It is connected with the phenomena of nature and the approximate value of the constant 1.618, quotient of the division between a number and its predecessor in the sequence from the number 3. The spiral grows the same extent as the golden rectangle, according to the ratio of 1.618.

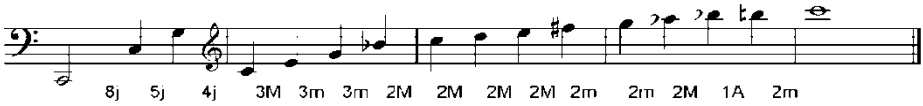




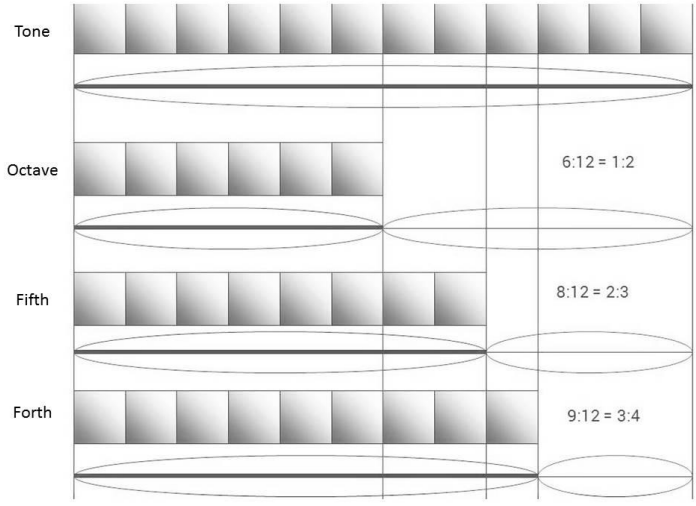
Harmonic series: The harmonic series is the set of tones heard simultaneously when a material body vibrates producing a fundamental tone. When a note sounds on the physical plane, it does not sound totally pure, but comes coupled with many other tones. These tones that come along, called harmonics, follow a sequence related to the Fibonacci spiral.

[10]Leonardo Fibonacci (Italy, 1170-1250) was a mathematician. He has been known for discovering the Fibonacci sequence (1.2, 3, 5, 8, 13, 21 ...) and the introduction of Arabic numerals in Europe.

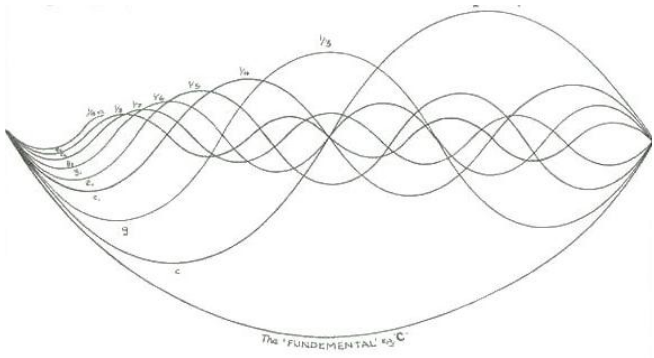
This series is an infinite sequence of tones that comes from a fundamental stationary oscillation, originated from electrical oscillations, sounds or other. It is possible to find the frequency intervals between the harmonics: perfect octave, perfect fifth, perfect fourth, major third, minor third.



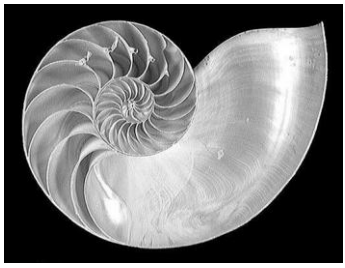
The first harmonics are the most consonants and pleasant sounds that provide sensation of rest and stability. Pythagoras was the first researcher to study the relation between the first three harmonics (octave, fifth and fourth) due to the sound caused by the division of a string in 2, 3 and 4 parts.

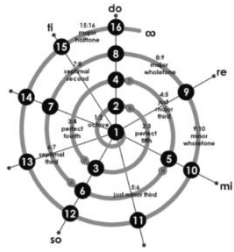


The division into a portion corresponds to the root note properly; 2 divisions correspond to the octave; 3, to the fifth; 4, the fourth; 5, the major third; 6, the minor third, etc. The following chart shows the possible vibrations on a string: each division of the string corresponds to a sound of the harmonic series.



The model of the harmonic series is in line with the theory of the growth of life, present in the spirals of the galaxies, sunflower seeds, shells, the proportion of the human body, the way of growing plants and almost everything in the universe.





By this theory, it is possible to relate the vibrations by octaves aligned with each other. An octave is a sound that has exact frequency corresponding to the double, triple, quadruple, etc. or half, quarter, eighth, etc. in relation to the first note.

> The sounds of the harmonic series give the hierarchical order and a sense of consonance and dissonance. The duration also gives a hierarchical ordering. The fifth has great importance because it is the first interval of the harmonic series, and by the fifths, all notes are generated. From fifth to fifth, up and down. There is the pentatonic scale with the first five fifths. The diatonic, adding two more fifths, and the chromatic, adding five more fifths. Two followed fifths create a compound second, that played on the same scale has a tendency to approach the root. The minor third comes by three fifths, but sounded in the same scale it dissolves the feeling of the fundamental. The third has a fuller and more complete sense than the fifth, for the fifth is purer, it merges better

to the fundamental. The concept of consonance is connected to sound along, close. The feeling of beauty or pleasure is subjective and does not depend on consonance. It is somewhat simplistic to try to plan the effects of chords, intervals, or notes separately. The song is set in a context, each chord will play a role depending on the phrasing that comes before and what will follow. We can say that certain sound combinations tend to an effect or another, but there are endless possibilities to neutralize or modify the effects, depending on the organization of music and even on the listener state. Music is a living thing, fluid, dynamic, it is not related to rules. A major key not always sound cheerful - Chopin wrote quite melancholic nocturnes in the major key - and so does the minor key, which is not always sad. The human being is extremely complex, external reality and a subjective and special inner particular universe influence him, he has the freedom to interpret the rules and to not be subjected to them or to renew them. Yes, we can make analogies, studying trends, to note that if a subjective effect is repeated in a large number of subjects, then it is closer to objectivity - yet it is variable and unpredictable. The cultural context, time, mood, personal history, records of auditory memory, and many, many other factors will come at the time of listening and the result is extremely intricate, it is unique, completely individualized for each one and for each moment. Each one should look for oneself, questioning, experimenting, observing.

10) Musical noting: Once the songs were learned by ear and passed on from generation to generation orally. However, at some point, there was the need to record the music.

Sheet music: ancient peoples tried to record the music through signs. There are records of Egyptian papyrus with lyrics of songs above which there are symbols signifying musical sounds. In Greece there are also found records of notes of symbols related to music about written poems. But it was only in the Christian era that came a more complete and universal musical writing. At the beginning of Christianity, with the need to spread the chant sung in cathedrals to monastic communities located in remote locations, Pope Gregory asked the scribes to write the sounds that the monks sang. The first record attempts consisted of

simple motifs, wavings that followed the ascending and descending movements of the song. These drawings only gave the idea of the melodic contour, but they were very inaccurate. Thus, scribes put two horizontal lines behind them to give a more accurate reference. Later, there were added two other lines forming a staff of four lines. The sinuous lines have been replaced by diamond-shaped figures and small rectangles, called neumes, which were set on that staff to show whether the sound was low (drawn below), high (drawn on top of the lines) or intermediary. So that the reference could become even more precise, it was drawn a signal called *clave* (Latin name for key) to indicate the position of a "key" note, in general C or F. All other could be established from that note. To date, this form of notation is used in Benedictine monasteries. The musical writing continued its evolution and the five line staff (pentagram) emerged, which is still used today. The notes are also represented by names: A = La, B = Si, C = Do, D = Re, F = Fa, G = Sol. The F and C clefs won new design with the introduction of the pentagram and then came the G clef, which is written with a stylization of the letter g, which corresponds to that note. It is called sheet music the collection of information contained in the pentagram about the pitch of notes, bars, values, time, tempo, dynamics, plus the name of the song, name of the composer and other information.

In a sheet, just after the clef signal on the pentagram it can graphically be seen in what key the song is. If the song is in C major or A minor there is no sharp (#) or flat (b) signs, but for other keys it is drawn a set of # or b. Major keys are nothing more than the repetition of the proportions that exist between the tones and half tones of the Ionian mode, or C major, whose beginning is the note C, transferred to other initial notes. So, for example, if we want to write the D major tonality, let's start at D and follow the tone, tone, semitone, tone, tone, tone, semitone ratio - which will generate D, E, F #, G, A , B, C #. Note that there are two sharps (F # and C #) in the D major tonality. Thus, there will be the drawing of two # after the sign of the clef in the sheet of a song in D major. This rule applies to other keys. The minor keys are called related; they are in a relation of a third below major keys.

11) Musical instruments emerged with human civilization. There are string, percussion and wind instruments. They can be made of earth,

stone, clay, wood, metal, skin, bowel, horsehair, tooth, hair, bone, nylon. Today there are many electronic instruments, but they differ from the laws of nature and bring artificial experiences. They can be possibly used to research and learning; with discretion, one can draw valid collaborations.

Wind: Instruments that use blown air relate to thinking and to the melody. The air vibrates contained in space through matter. Direct blow: the family of flutes (transverse and recorder); single reed: clarinets, saxophone; double reed: oboe and bassoon; nozzles: tuba, trombone, trumpet, French horn; keyboard and air: organ, accordion; harmonica.

String: They relate to the feeling and the harmony. Bowstrings: violins, violas, cellos, basses; Fingered strings: lutes, guitars, lyres, harps; Plucked strings: harpsichords; Struck strings with drumsticks: dulcimer, berimbau; Struck strings with fingering hammer: pianos.

Percussion: They are related to the action and the rhythm. The matter vibrates radiating the air around them. They can be: membrophones (drums); idiophones - they sound from themselves (xylophones, metallophones); lithophones (bells and metallic percussion); agogos, rattles, shakers, rain sticks, reco-recos, etc.

12) The **12-tone chromatic scale** is formed by the 5-note scale consisted of the sharps and flats added to the 7-note diatonic scale. Corresponds to the months.

Tonalities: The tonal system emerged in the Baroque period, when Western music conventioned the use of tempered system, from studies of several musicians, including Bach[11]. Established the average grade there with 440 Hz. Consequently, there is an octave above 880 Hz (twice) and there is an octave below 220 Hz (half). The frequencies of notes between two A (A# or Bb, B, C, C#, C # or Db, D, D# or Eb, E, F, F# or G b, G, G# or Ab) will be equally divided in the space between octaves. The note A (and all others) has been conventioned with other

[11] Johann Sebastian Bach (Germany, 1685-1750) wrote *The Well-Tempered Clavier* helping to introduce the temperament system equal to the chromatic notes of the musical scale.

frequencies. The vibration that is closest to the natural (used in some therapeutic processes) is the pitch of A in 432Hz.

In the study of the harmonic series, the vibrational frequencies of the tones follow a law of natural perfection; a key tone resonates in harmonics. In this natural system, the proportions between octaves, fourths and fifths are always perfect, which means that there are little dissonances on thirds and sixths. Also, this system forms a sound spiral that does not close. The tempered system changed the pitch of all intervals, with the exception of octaves, so that they stay more or less balanced in a circle divided into twelve chromatic notes that are positioned in a sequence of fifths, called the circle of fifths. This system allowed the development of instrumental groups. In the tonal system there is a center where music rests, called tonic (or key), and there are two important points too: the dominant (which is the fifth in relation to the tonic, a music site closely related to the tonic and that seems to ask it to confirm) and subdominant (which is the fourth in relation to the tonic, and is a musical environment that seems to distance the tonic).

The experience of a major or minor chord is very distinct. In a musical context, the experience gain different directions, it can be diluted or emphasize certain effects, but the experience of listening to the major and minor chords separately bring polar impressions, which are universal. The major is more expansive, and the minor, more internalized. It is known that some cultures use minor keys to festivities in which Western cultures would use major and vice versa, but the organic neurologic sensation of major and minor chords attest that they are actually expression of spaciousness and introspection, respectively. The major key was originated from the Ionian mode and keeps its proportions. The minor key was originated from the Aeolian mode.

13) Resonance: From the harmonic series we began to study the resonance, one of the most important principles of sound. Resonance is defined as universal effort of objects to vibrate at the same frequency. As a tuning fork vibrates near a similar one, it will cause it to vibrate at the same frequency. It is also the principle involved in the amplification of sounds, for example, when an instrument's string is played and the hollow resonance box vibrates in step with that

sequence. The idea of resonance is passed when using terms like in sync or out of sync.

According to the book *Craddle of Sound*, Christina Tourin, every cell in the body is a resonator. Each organ is formed by a set of cells that respond the same way to a certain type of sound vibration. As a result of resonance, music has the power to not only change brain waves, but profoundly affect the functioning of the organs. To determine the resonant tone of the patient, one must experience and observe. The harp can be used to resonate in the back of the patient certain tones, for example, going through the circle of fifths. Its basic tone will be resonating in the fifth above or below the fundamental. The patient tone may change from day to day, depending on the circumstances. From the tone, one can play improvisations based on Greek modes as they were studied in the Renaissance by Marsilio Ficino, from the knowledge left by Socrates, Plato and Aristotle.

The Monroe Institute (research organization and education nonprofit, founded by Robert A. Monroe, musician and researcher), studies the awareness and perception with various research on resonance and synchronization. It is also the principle involved in the amplification of sounds, for example, when an instrument's string is played and the hollow resonance box vibrates in step with that sequence.

The study of resonance has a lot to do with string theory, which is an attempt to unify the Theory of Relativity, of Albert Einstein[12], and quantum mechanics, also studied in correlation with the health sector, as in the studies of Deepak Chopra.[13] String theory says that all particles in the universe are made up of strings. The material is formed by particles and these are formed by even smaller particles invisible to the naked eye, the atoms. These are formed by electrons, protons and

[12]Albert Einstein (Germany, 1879 - USA, 1955), author of the General Theory of Relativity, showed that the material consists of 99.9999999% empty space, made of energy and space and time are not absolute, vary with the observer movement.

[13]Deepak Chopra (India, 1947) is a doctor who lives in the United States, writer and teacher. He wrote the book *Quantum Healing*, a trip to the border of the new medicine, integrating body and mind.

neutrons, which, in turn, are formed by quarks, according to conventional physics. According to string theory, quarks are formed by small energy filaments like tiny vibrating strings. These strings would be vibrating in different patterns with different frequencies, producing the different particles that make up the universe.

One can make an analogy between these strings and the strings of a musical instrument, in the same way that different vibrations of the instrument strings produce different sounds, vibrations of such small energy filaments produce different particles. String theory is also called the *Theory of Everything* - ToE. The mathematical demonstration of string theory does not work in a universe with three spatial dimensions, but in one with ten dimensions of space and one of time. This means that, if the theory is proven, there are more dimensions than the height, length and width. It is still only an idea and cannot be demonstrated experimentally.

Similarly, one can measure that every vibration of the universe resonate each other, wherein a mesh. Working with sound energy can then have an effect on every people's bodies.

14) In music there still are **other elements** that are considered as the shape (structural nature of a piece of music), the agoge (time fluctuations), the ornaments, the counterpoint, style, etc. But we will not go into details here.

4 – Harp therapy possibilities

Courage, persistence and integrity are positive qualities needed in pioneering work. Similarly, they are also humanity, kindness, citizenship, compassion and prudence.

Harp therapy is a legally established activity in hospitals and clinics in the United States, Europe, Japan, Australia. For its harmonizing and soothing properties, it was used by the Egyptian people, Sumerians, Hebrews, Celts, Greeks, in rituals that reconnected them with themselves and with transcendent states. It is a harmonization service that can be used from the birth attendance, until the transitional terminal states of life, including loss, trauma, shock, surgery, depression and dementia states, being very suitable as an aid in palliative care.

Harp therapy is an art and a transpersonal orientation of science that uses the harp with care to the patient in its constant flow, moment by moment. The harp therapy practitioner uses knowledge about the relation between the moods and trends in the patient to propose similar musical sounds, trying to resonate loudly with him and play his character. It seeks to track the changes that are happening and draws a sound way to take the patient to a state of mind, mood, and more homeostatic feelings than he had at first.

Scientific research proves that music can relieve symptoms of pain and assist in the activation of new connections in the brain, memory recall, in improving emotional states, health and welfare. Also the following human responses to music are proven: distraction, imagination, emotion, catharsis and relaxation. Therapeutic music performed live at the bedside can have a healing effect immediately and it is not intrusive. Its goal is not performance, but assistance.

The harp is an instrument that offers multiple possibilities of use for different stages of life. It can be used associated with the singing, with other instruments, colors, movements, and can accompany stories, reflections and meditations. Songs can be from many different styles, from different cultures and eras. May be pentatonic, modal, tonal, with exotic scales; and their rhythm can vary widely from well-defined structures and marked by the free arrhythmicity. Improvisations can be explored by merging all the capabilities offered by the harp. However, the use of each skill should be very selective and specifically targeted to the very individual singular needs of each client.

In my practice, I have had opportunity to use the harp in different contexts. Often my activity with harp therapy interfaces with music therapy and music education. Other times, interfaces with psychology and transpersonal studies of energy use. I try not to put tight limits on the activity. The most important thing for me is to understand the needs of my client and to look to supply it with all the resources at my disposal, including the harp most often.

In music therapy, we study in detail various types of disabilities. In my work, I believe that every human being has amazing capabilities, so regardless of a person having a delay or giftedness or a syndrome that distincts he or she from most, I try to see the potential of each one, on the level which the person is in consistency with his or her biological evolutionary stage (pregnant women, fetuses in the womb, babies, children, adolescents, adults, elderly, dying and bereaved).

In rare cases I can only use the harp in my care. Most of the time, I associate its use with other techniques such as singing, watercolor, the activity of coloring symbologies of the harp or mandalas, body movements with colorful cloths, breathing exercises, use of diatonic bells in rainbow colors. The musical repertoire that I use is very broad. Also rare are the times in which I use only therapeutic music and modal improvisations, such as they are advised in harp therapy. In general, I add to these basic musical directions, folk songs, known Brazilian songs and I make up great mix. I need to meet the people and groups with whom I work, so they way to connect with them is to use songs that they know. But I always bring new music and introduce my harp therapy knowledge in the work, because it is important that

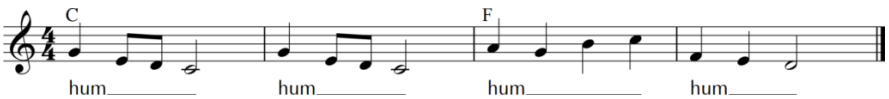
they learn new things and start to meet this new proposal. I will share some ways to work with harp therapy with different people and groups.

Gestation

I created a therapy session model for pregnancy. It can be done individually or in groups, with or without partner participation. Pregnancy is a time of opportunity for the mother to know, be with and also to get to know her partner and the baby to come.

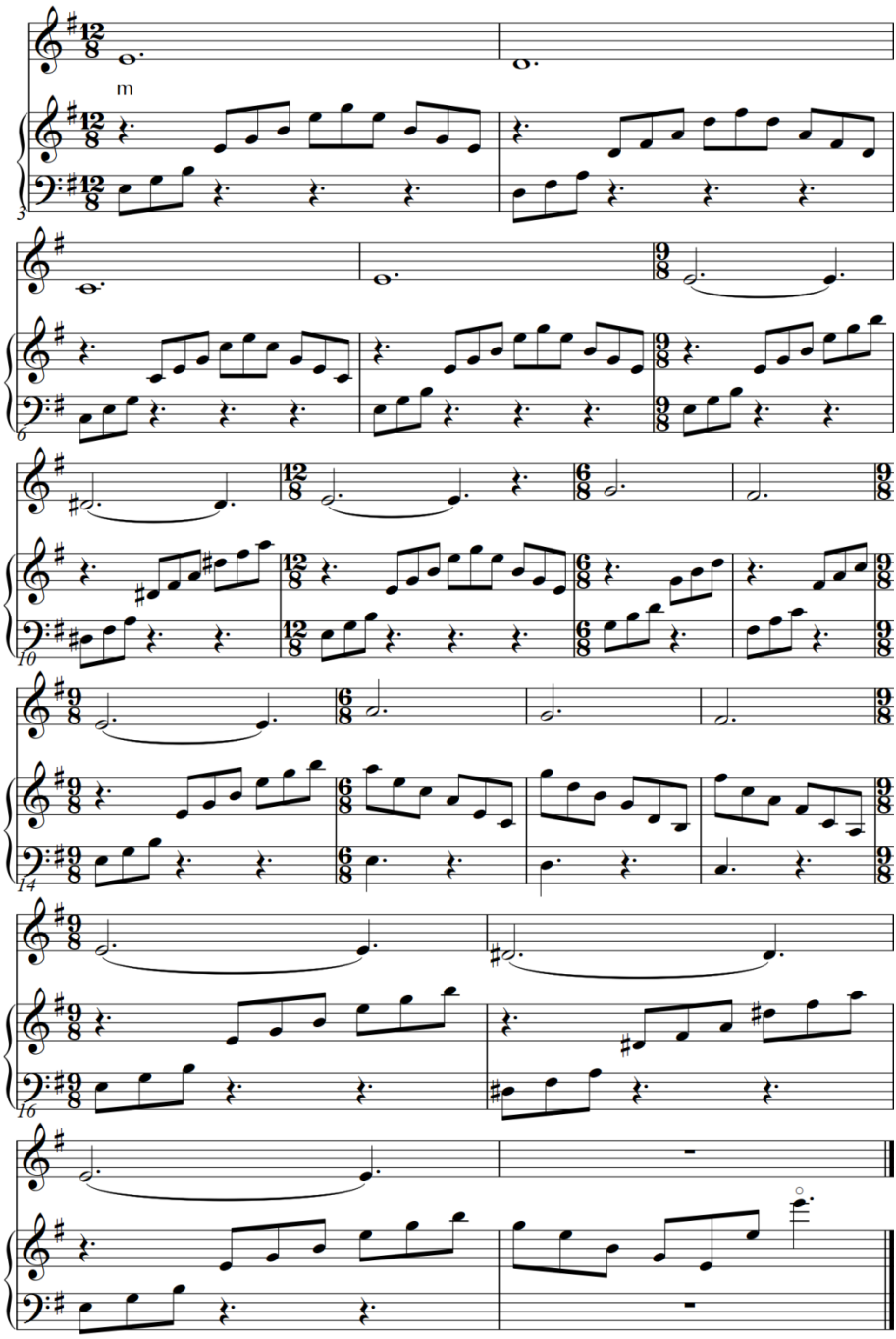
Music can help to create a suitable atmosphere for this process to take place.

- Breathing and singing with the harp: while I slide my fingers through the strings tuned in a special way (on a scale of 5 notes) from top to bottom in a movement called *glissando*, I ask for the pregnant to expire and to take a break. Then I slide the bottom fingers up while the pregnant inspires and again pauses. This scale of 5 notes is called pentatonic and is very suitable for babies.
- While the participants slowly breathe, they can sing with the mouth closed (mouth *chiusa*) with the sounds *Hum, Mm* or *Ng*.



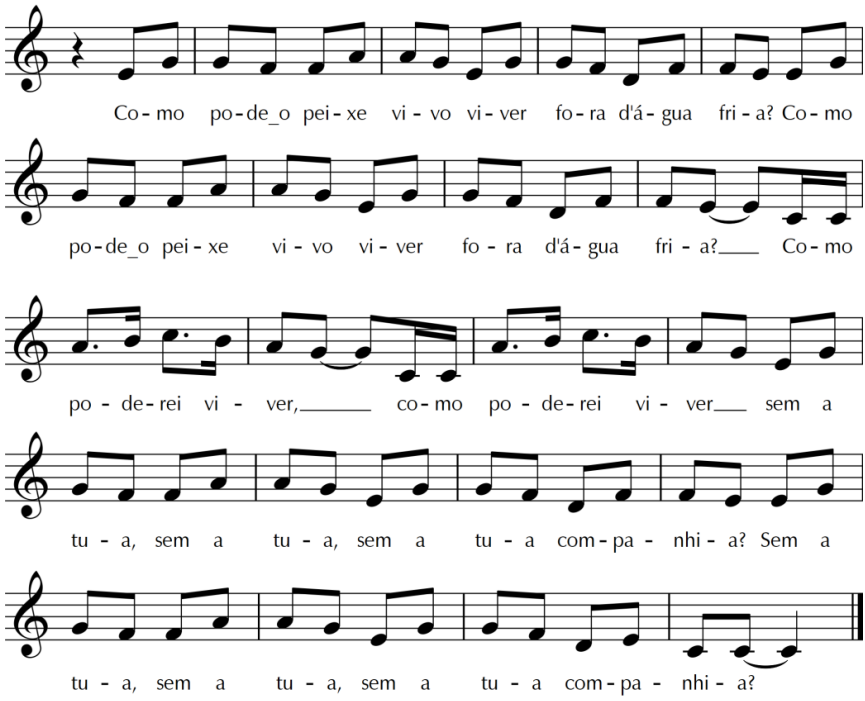
Inspired on the CD Respirando Com o Bebe (Breathing with the baby) - Happy Baby.

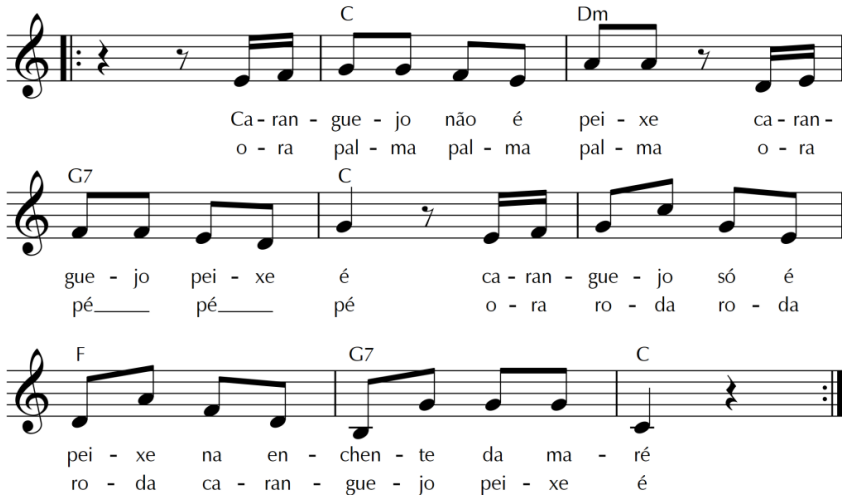
- Massages: I offer a tuned harp on pentatonic scale to the pregnant play while I massage her back, following with the voice with Ng or Mm the sounds she improvises on the instrument. If the partner is together, he or she can massage the pregnant while I massage him or her.
- Sometimes I play a song accompanied or not by whispering in the harmonic minor tonal scale.



Composed by Cláudia Miranda.

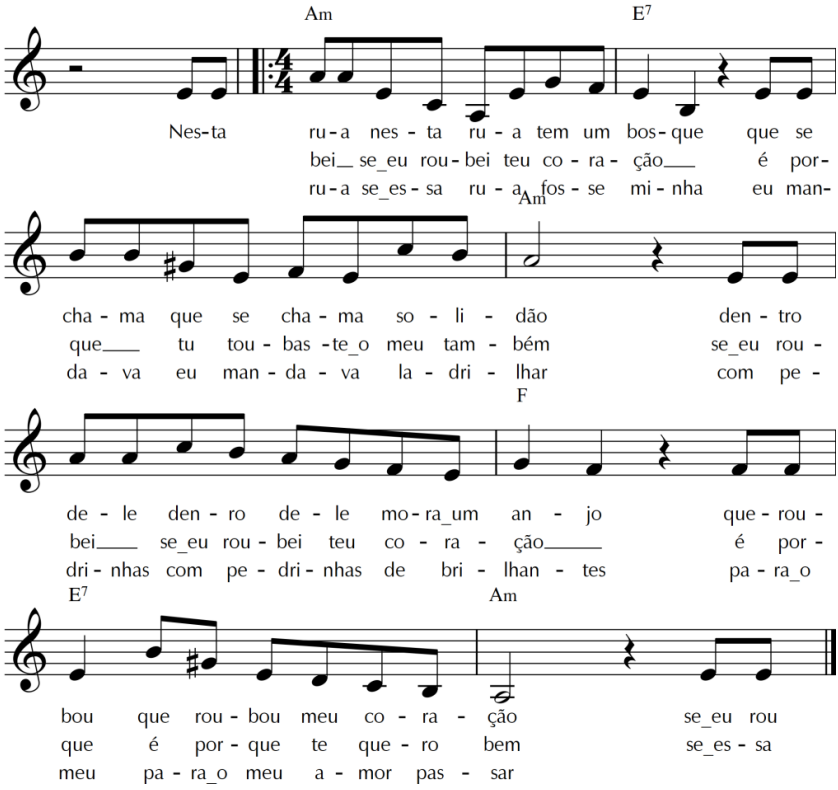
- Movements and dances to cradle: while I play folklore nursery rhymes on the harp, the mother (and her partner) dance with colorful cloths as if they had the baby on the lap.





14

[14] As it can the alive fish / To live out of the cold water / As it can the alive fish / To live out of the cold water / How can I live / How can I live / Without yours, without yours / Without your company /Without yours, without yours / Without your company
Crab is not fish / Crab fish is / Crab is only fish in the flood of the tide / Now clap, clap, clap / Now foot, foot, foot / Now spin, spin, spin / Crab fish is



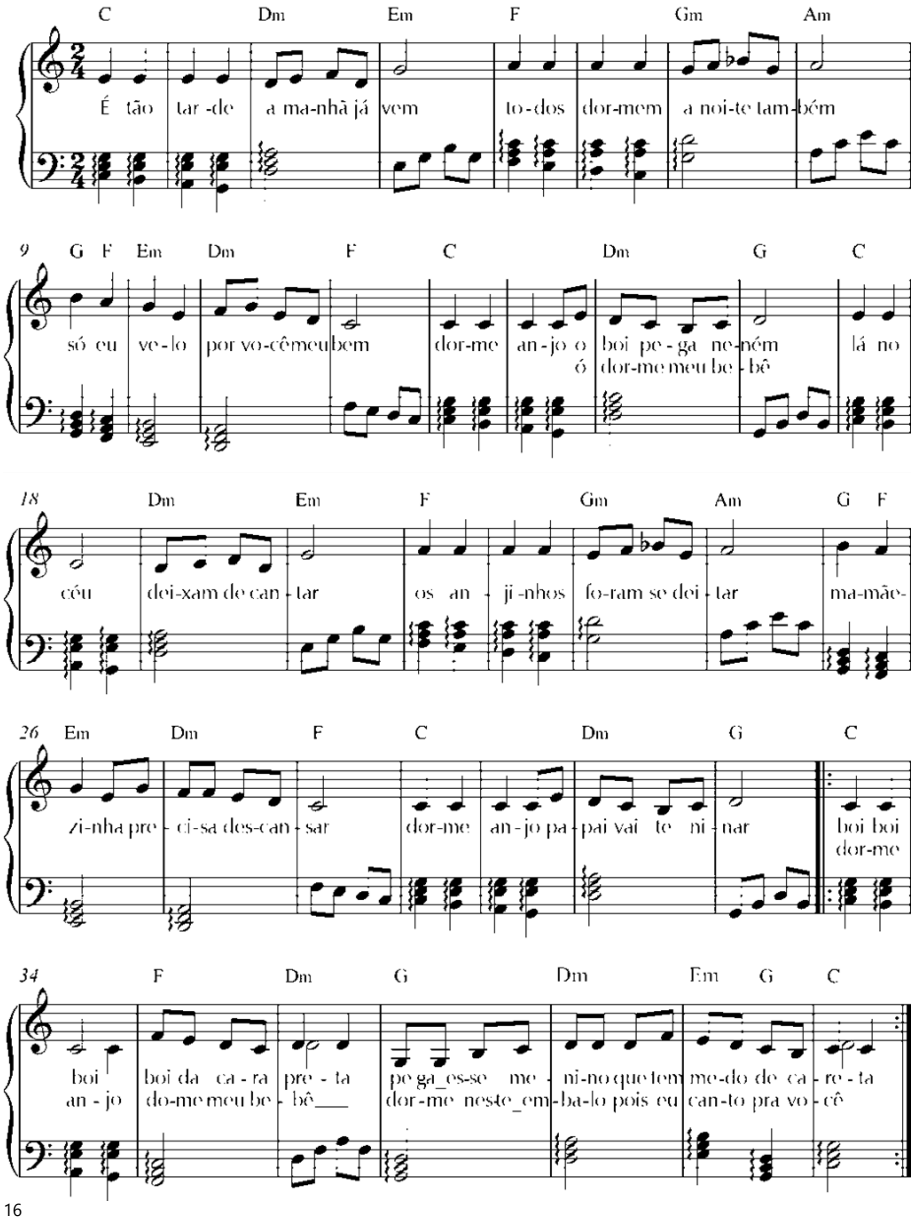
15

- From the 21th week, the auditory apparatus of the fetus is formed and the baby in the womb hear many sounds, through the liquid medium: the heartbeat of the mother, the sounds produced by the hollow organs (stomach and intestines mostly), bowel and digestive movements, sounds of footsteps and skeletal joints. The baby also realizes the external sound vibrations to the mother's body. Hears voices, and among all the sounds heard, the mother's voice stands out. The baby realizes the rhythm, cadence, her timbre, intonation,

[15] In this street, in this street there's a wood / Which is named, which is named Solitude /Inside it, inside it dwells an angel /Who stole, who stole my heart. / If I stole, if I stole your heart
You stole, you stole mine as well. / If I stole, if I stole your heart, / It's just because, just because I care for you. / If this street, if this street was mine / I would bid, I would bid someone to tile it / With pebbles, with pebbles made of diamond / Only for my, only for my love to walk by.

but not yet distinguishes the spoken words. If the mother sings to the baby in the womb, he or she will realize the melody and will remember it when he or she is born. In order to hear the articulated word it is necessary air between the transmitter and the receiver, which does not happen with the fetus immersed in amniotic fluid where the sound is propagated with greater speed.

- Lullabies from different cultures (Acalanto, Wiegenlied, Ninnananna, Lullaby, Canción de cuna, Berceuse): when working with pregnant women, many lullabies can be remembered. Nowadays, people usually sing very little. It is important to realize that they can sing regardless of whether they are in tune or not, they can simply afford to feel light and let the voice come out, singing songs that are in their background memory. With practice and with proper exercise, the voice can be improved. Every mother chooses what to sing, she can create songs, adapt lyrics and sing only na na na, or with the mouth closed hm hm hm. The Lullaby (Acalanto) - with its smooth and sweet melodic line - brings the child the safety she enjoyed in the warmth of the womb, leading to calmness and serenity that is not found in any other environment.
- It has been shown that music is important to the intellectual, auditory, sensory, speech and motor development. Music also enhances body language, affective and emotional, memory, coordination and creativity development. It reduces stress levels while having a relaxation effect. Furthermore, music stimulates language development since it provides active neural connections in the language field.



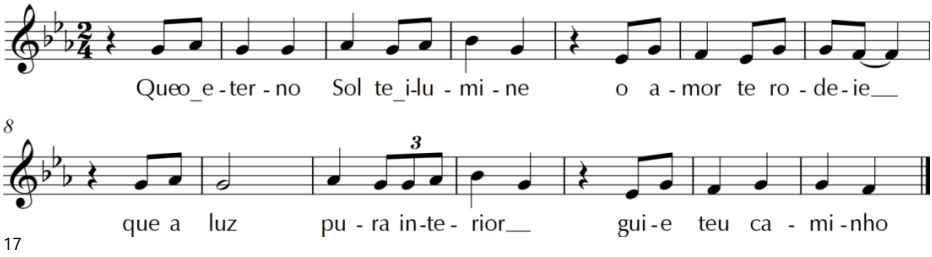
16

[16] It's so late, tomorrow comes / Everybody sleep at night too / Only I watch for you, my dear / Sleep, angel, bull catches baby / Up in heaven stop singing / The little angels went lying down / Mommy needs to rest / Sleep, angel, daddy comes to make you sleep

Bull, bull, bull, /Bull with the black face / Get this child who / Is afraid of frowns /

Music by Dorival Caymmi, arranged by Cláudia Miranda.

- Creative visualization, blessings and relaxation: we can play therapeutic songs (*Healing Music*, Christina Tourin) while the pregnant woman (or couple) is lying with her eyes closed visualizing positive energy for her family. In general, participants very well receive these moments.
- At the end, we can sing a song of blessings.



Inspired in Mirabai Ceiba CD.

Babies

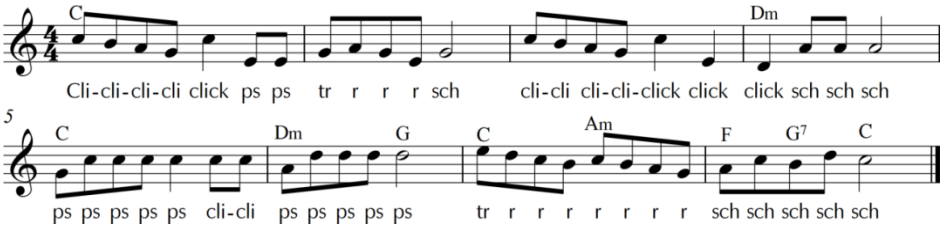
With babies, work with harp therapy can help to stimulate or pacify the neuronal system, depending on the need, and can help in the development of communication and interaction.

I use the pentatonic scale and the Ionian mode, exploring the fifths and descendant scales, since the baby is still in the process of "descent" from the spiritual worlds to the material world.

- Musical stimulation and pacification (consonant sounds): sounds like *click* and *trr* stimulate, and sounds like *sh* pacify. They can be used interchangeably to stimulate-pacify.

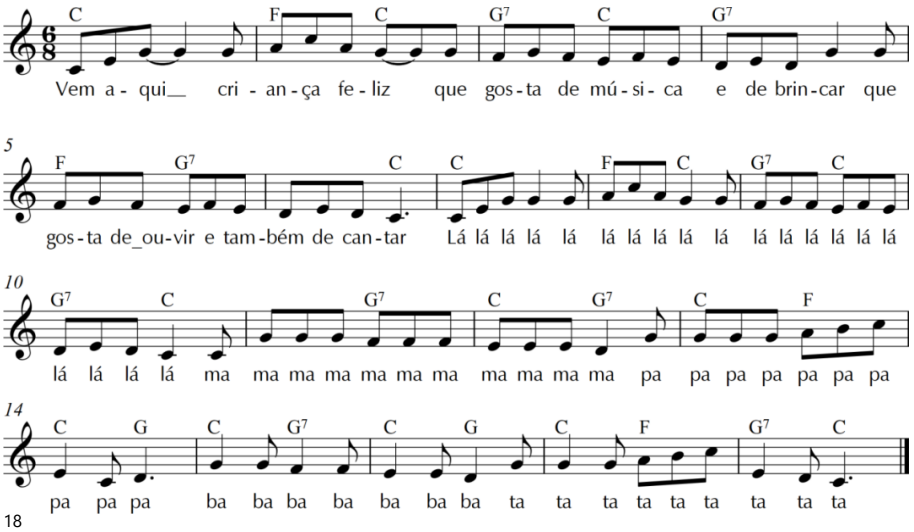
Sleep, angel, sleep, my baby / Sleep in this lulling because I sing for you

[17] May the eternal Sun enlightens you, the love surrounds you
May the pure inner light guides your way



Inspired in the English public domain song *Sing a Song of Sixpence.*

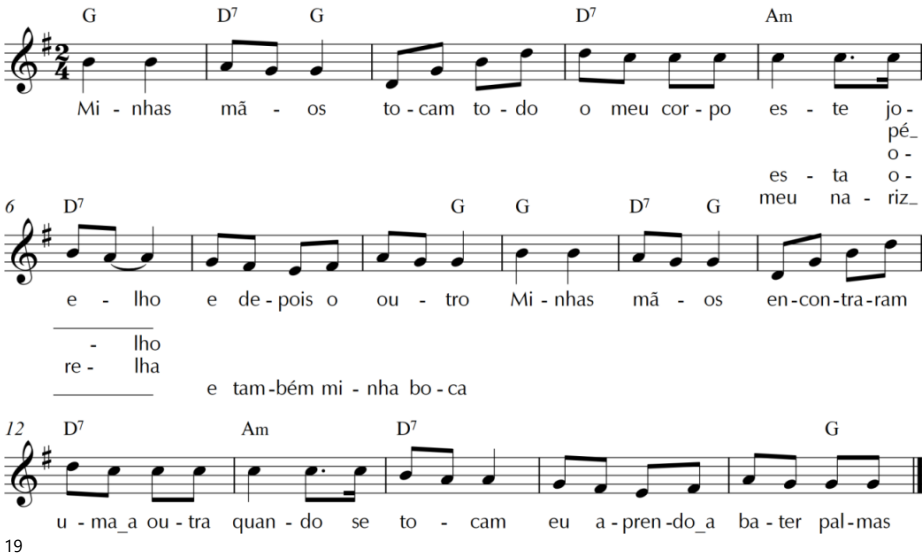
- Babbling: songs that stimulate the babbling of consonants like *l*, *m*, *p* can be used.



Inspired in the English public domain song *Little Boy Blue.*

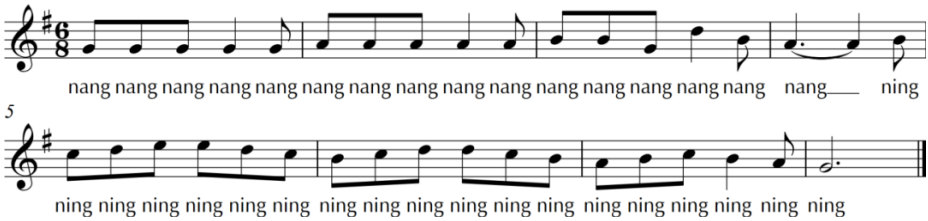
- Songs that associate body movements can also be used.

[18] Come here happy child who likes music and to play
Who likes to listen and to sing



Inspired in the English public domain song *One, Two, Three, Four, Five.*

- Vowel sounds: We can sing songs with only vowels or adding *ng* to bring relaxation.



Inspired in the English public domain song *Rub-a-Dub-Dub.*

Children

All activities done with children should be playful, creative, with lots of movement.

[19] My hands touching my body
This knee (foot, ear, and also my mouth), then the other one
My hands meet each other
When they touch, I learn to clap

- Opening: It is always good to start with a good morning or good afternoon song. You can use the same melody, add the question of what is their name, and speak your own name.

- I suggest to explore the movements and to introduce many stories while working with them. This legend of the harp that I created can be told:

  They say that the harp is one of the oldest instruments that exist...

  Before this world was, much, much before, there was only the world of angels.

  This was a world of loving warmth and radiating light. The colors moved turning into sounds. The universe expressed harmony full of peace and serenity. Some angels were made of the burning flame of love; there were angels made of pure wisdom and there were angels full of courage.

  Once these courageous angels wanted to create a world of matter and form.

  Thus, heat, time, space, air, liquid, the movement, the shapes and the material came to be.

  Everything that exists was manifesting. They first appeared in the world of energy and then expressed in forms.

  And humans came to inhabit the earth. They have left the world of pure loving warmth, bright and harmonious to come to a planet where there is heat and cold, day and night, noise and silence.

  At first, they communicated by thoughts and used their voice only to sing in gratitude. Then they started talking and to forget the songs they heard in the past.

  They were moving away from the angels and the world was becoming less ordered, the voice that was once used only to sing, was being used to talk and to create unnecessary things.

  But not all humans have lost the connection with the angels...

  One day, two young brothers Marian and Ios, were concentrated under an old tree that had some cavities, when they looked up and saw a bird bringing in its beak a long wire of a palm tree bark.

  The small animal placed the tip of the wire attached to its nest that was on a branch of the tree and handed the other end in the hands of Marian, who gave it to his brother.

Ios tied the wire at the root of the tree, so it was taut. The wind blew, the rope vibrated and rang. What a beautiful sound!

The two children realized that a stretched string attached to a resonant wood could produce sound. They thanked by witnessing the first Earth Harp.

At that moment, clouds in the sky opened and they had a glimpse of many angels playing harps, cymbals, flutes, harps and lyres.

Touched by such beauty, they decided to make an instrument that would vibrate harmonies of beauty and peace to the planet.

Then they asked permission to the angels of the plants and they took a piece of wood of the old tree. They left that wood dry for a long time, and while they waited, they prepared themselves with good energy.

In the right season, at the most appropriate time, they got dry wood and carved it in the shape of an angel wing; they left a hollow interior that could resonate.

They asked permission to the angels of the animals and took horse manes and animal bodies that were rotting in the forest and made strings of various thicknesses.

Pediram permissão aos anjos das pedras e pegaram alguns metais parar fazer com ele as cordas mais grossas.

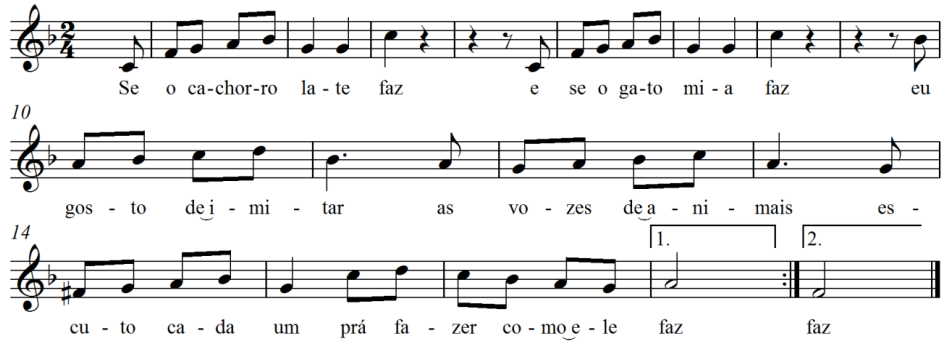
And so they stretched all these strings on the wing-shaped wood and, when all was ready, a fairy came to live inside.

Marion and Ios played: Bling! The instrument sounded its tones: blalan, blalan, tlalan ... How wonderful to play on earth sounds of such great harmony!

Marian and Ios wanted the world to become again as harmonious as it was at the beginning, so they decided to play the harp very well, the most beautiful songs, the most peaceful sounds.

They wanted to radiate beneficent energies as an aid to all consciences and now they travel the world teaching harp makers to produce instruments that will be a bridge of communication between angels and humans...

- Games with animal sounds can be used. We can explore the different sounds that can be sounded on the harp. It is very good to work with the weak-strong, high-low, fast-slow, high-volume low-volume, short-long continuous sound contrasts and sound interruption (short-long pause).



[20]

Music by Josette Feres.

- Children love to sing the notes of the scale and that can be associated with the image of stairs. On the harp, the scale is easy and didactic. In the song "Dorme a Cidade" (*The city sleeps*), in the Saltimbancos CD, Chico Buarque, is greatly appreciated. They can play the harp while singing over and over every note of the ascending and descending diatonic scale.

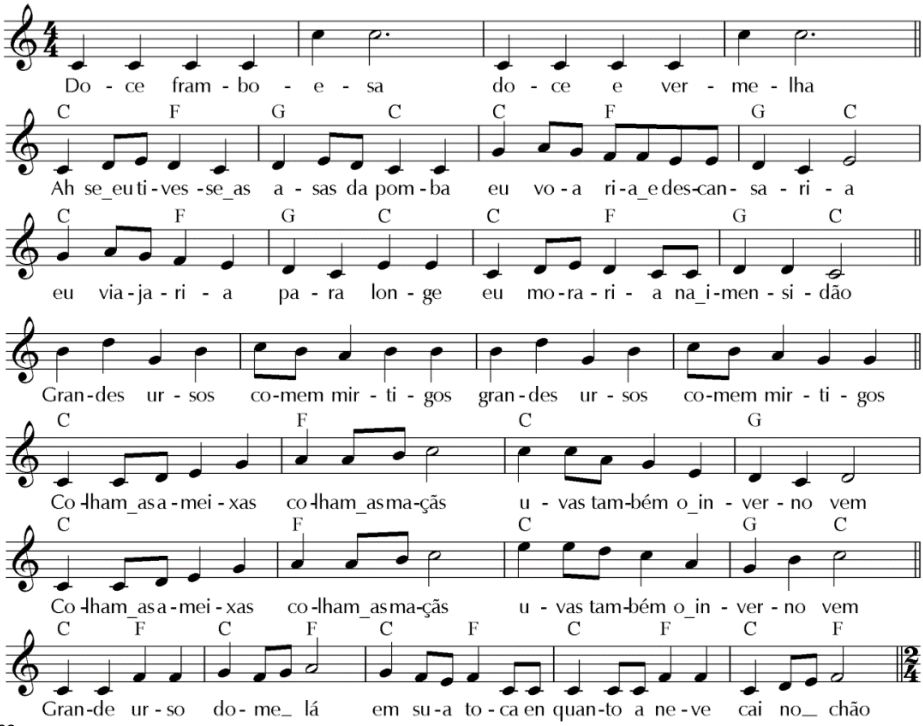
[20] If the dog barks, it makes / And if the cat meows, it makes / I like to imitate voices of animals /I am about to do as they do

[21]

- Choral activities with canons are very appreciated by children. Some of them can learn to play the notes C (red strings), G and F (blue strings) to accompany the tonic, dominant and subdominant chords.
- Learning the harp: Some children may want to learn to play the harp, so the harp therapy can have a close relationship with music education. The difference is the focus. While music education emphasizes learning, harp therapy prioritizes the welfare of children and the development of his potential as a whole, even if they are not musical.
- The story of *Dascha Dove*, Book 1 of the *Rainbow of Sounds* collection, Christina Tourin, is very suitable for children. The first song uses only red strings (C) associated with the lyric of the sweet

[21] Sleeps the city / Lasts a heart /Mysterious / Makes an illusion / Spells a verse / There in the melody / Candidly / Painfully
Sweet the music / Silent/ Drops my chest / Releases itself in the space / Makes itself sure / My song / Chink of light where /Sleeps my brother

raspberry. I made a free translation to this song associating the lyrics with the notes names as we use in Brazil.



[22]

Christina Tourin songs to volume 1 of the Rainbow of Sound collection.

Teenagers

Particularly, I have little work experience with teenagers. My greatest experience with this age group is with my stepson, Oto, which brings me opportunities to learn to take a fresh look at the present.

[22] Sweet raspberry / Sweet and red
Oh, if I had dove's wings /I would fly and rest /I would travel far away / I would live in the immensity
Big bears eat blueberries /Big bears eat blueberries
Gather the plums / Gather the apples /Grapes too /The winter comes
Big bear sleep there in your den /While the snow falls on the ground

- With preadolescents and teenagers, we should preferably use nowadays songs.
- Teens need to feel responsible and autonomous. Folk songs of childhood, used with small children, adults and the elderly, should be avoided at this stage. We can use music to work healthy relationship with nature and consciousness for world peace.

Adults

Adults can have very specific demands aimed at the self-knowledge. So often music therapy with them can interface with psychology.

- Creative visualization: we can play improvisations on the harp promoting varied atmospheres to make creative images in the listener. It is interesting to explore the specific character of the different musical modes (later we will have a chapter where it is better explained the therapeutic effects of Ionian, Dorian, Phrygian, Lydian, Mixolydian, Aeolian and Locrian modes).
- We can induce the patient to get in relaxation and to have therapeutic focus. In that case we can use CDs with harp music (in general I use in these processes impressionistic music of Ravel or Debussy, which stimulate visualizations. We can rely on the GIM method (Guided Imagery and Music), created by Helen Bonny, to take patient to travel with the music while we work with phrases like: *"Where are you now?", "What moves you?", "What do you feel?", "Let the music be with you"; "Does the music brings you something?", "Let the music help you to go...", "What is the music telling you?"*. When the song comes to an end, the client is guided slowly and safely back to a normal state of consciousness. We can ask him to draw a picture (mandala), a sculpture (clay work) or a poem. In the end, there is a short dialogue, where we try to help the client to connect the experience of his daily life to the focused problem.
- In very specific cases in which customers have already expressed openness to multidimensional approaches, we can also use a technique of music and projective views, a Glaskin experiment

variation that induces altered states of consciousness. This technique promotes perceptions that act through synesthetic fusion of the senses of touch, hearing, smell and taste. We seek to lead the patient in the following actions: relaxation; energy body elasticity exercise to cause ballooning (a feeling as if the body were inflated); description of emotions, feelings and images evoked by each piece of music; shutting the sound down when one feel the images very clearly (to experience the projective experience without interference) and remembrance. The client has full control over all that he or she experiences.

- In working with adults, it is sometimes appropriate to put some thoughts that should be made individually with themselves: *What is my mission in life? What am I here on earth to do? Who am I really? What is my essence? What really gives me joy and would I like to do forever? What makes me feel alive? What makes me happy? How do I want the others to remember me by? What is my most positive feature? How is my Integral Self?*
- The adult must be aware of the steps required to balance: 1. voluntary attention, willingness to change and courage; 2. contact with helping energy (can be a therapist, book, intuition to have acceptance, understanding, carelessness); 3. Self-regulation by a new rhythm, with love for the process and bond with the new proposal; 4. Self-organization, which will result in joy; 5. Well-being, harmony, peace and freedom to be who one is will be the outcome of the process. Mantras like the following (Tune with the Infinite) can be used: Balance, peace and harmony. Nothing in excess, nothing missing. I am in the universe, the universe is in me. Connection. Integration. Union. Universe infinite in my infinite being. Tuned, they resonate balance, peace and harmony.
- Breathing: It is important to identify the customer time of inspiration, pause, exhalation and another pause, with the goal of increasing the breaks, inhaling and exhaling deeply. We can propose motions with the infinity symbol (lemniscate) in 3 directions:
    - Vertical: Body – Conscience – Mind / Action – Feeling – Thought

- Horizontal: Yin – Neutral – Yang / Instinct – Intuition – Reason
- Transversal: Past – Present – Future / Memory – Now – Planning

- Heartbeats: Identify if the heartbeat is short-long or long-short. The first time is strong and it can be short or long. Realize how many beats per minute the heart gives.
- Changes create discomfort, so COURAGE is needed! Help the client to identify their self-sabotage by not considering the treatment a priority.
- Help the client to make a mature transformation and to perceive themselves as a total self that cover multiple states, dimensions and relations:

	Areas of life and being	**Characteristics** How do you rate your conscience, attention and developments in the items below?
1	Physical and Energetic	Physical constitution and temperament: Health and vitality: Predispositions:
2	Emotional	Mood, humor and susceptibility: Sensitivity (do you like art, music, what are your preferences?): Are you creative, have initiative, or are you influenced by others?
3	Intelectual	Areas of interest and talents: Discipline and concentration: Studies:
4	Superior dimensions of consciousness	Are you aware of immortality? How is your tuning with other dimensions? And your connection to protection energy?
5	Family life, friendships and leisure	How is your sociability? Do you have feelings of forgiveness, gratitude? Do you consider yourself capable of harmlessness? Do you feel yourself as a victim or a victimizer?
6	Profession, leadership, communication	Do you have discernment? Do you use logic? How is your productivity? Do you have continuity? How is your relationship with authority as in the coordinating role and in the role of coordinated?
7	Financial independence	Are you aware of immateriality? What is the value of money for you? Are you economical and objective? Are you realistic, aware of your own situation?

		Do you have balance, detachment, generosity and know how to create a structure that enables you to realize your ideals?
8	Assistantiality	What is your sense of justice, altruism, brotherhood with all the ethnic diversity and human culture? Do you have prejudices? What is your relationship with animals, vegetables and minerals? Do you have children, nephews, stepchildren, dependents, elderly parents?
9	Conscience	Do you consider yourself free? How do you use your free will? Do you have responsibility, ethics, cooperation, universalism? Can you determine your evolutionary priorities?
10	Me with myself	How do you consider your degree of maturity? Do you consider yourself coherent and authentic? Do you have self-care? Do you express serenity? Do you have a harmonious relationship with a partner?

- We can ask the client to draw up a list of his own positive strong features, and put in parallel a list of characteristics considered negative, that keep him from achieving desired goals. As a result, we ask him to list the characteristics to be developed.
- Resonant tone: harp therapy seeks to develop an inclusive attention to understand the client's temperament. We hear the tone of his voice and find that note on the harp. Then we realize if that tone is fundamental or if it is a harmonic. From then we improvise enhancing the tone heard in the mode more akin to the client. This subject is one of the distinguishing points of the IHTP compared to other harp therapy courses. Christina Tourin and Judith Hitt developed this study from the kinesiology taught by Susan Borg.
- Celtic circle: in the book *Cradle of Sounds* and in the *Creative Harpings* DVD by Christina Tourin, we find detailed information on this round of harmonies inspired by the ancient Celtic culture. The Celts considered three great impulses provided by the music: *Suantraighe* - to relax, calm down, and help to sleep; *Goltraighe* - to cry, to go into the depths of the soul; and *Geantraighe* - to illuminate, brighten, walk and dance. As an example, here is a harmonious circle for a person with resonance in G, which can be

played while a massage is done about it. You may follow the same scheme for all resonant notes and suit it to each patient.

G G G G / F F G G: play twice.
Add F# and play 8 bars in harmony with G.
Em Em Em Em / D D Em Em: play twice.
Em Em D D / C C D D: play once.
G G C C D D G G / G G C C D D G G: play twice.

- Playing music following the Celtic knowledge can be very beneficial to those who listen. Even if the physical suffering may not always be relieved, various types of comfort could be given. Among them, music has always been an important factor. The Celts had the motto "have a happy death," for they knew the effects of music on patients suffering and helped them to transform their breath and spirit.
- Meditation: the harp can follow reflections and meditations. In this case, we use music to promote trance, with ostinatos (motif or musical phrase which is persistently repeated) and rhythmic balance. We use major and minor, natural or harmonic, tonal scales.

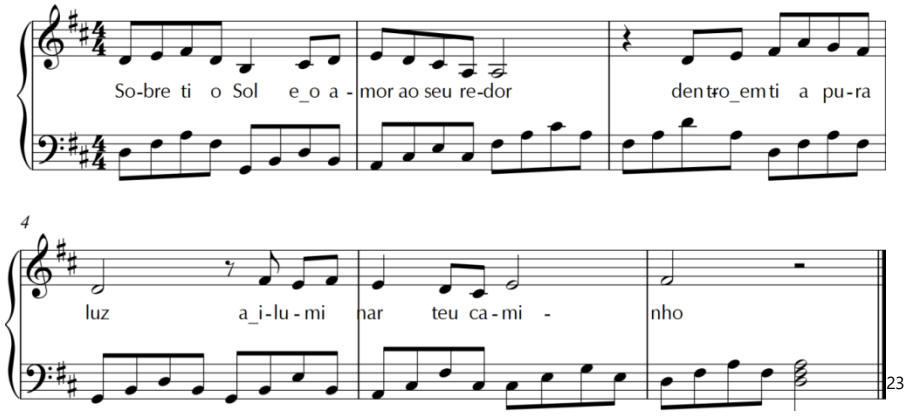
Elderly

I often draw an analogy between the stages of life and the seasons. Spring corresponds to childhood; summer, youth; autumn, maturity and winter would be the stage of old age. We can learn to see the beauty of winter and appreciate all the learning done in life.

- Using colored diatonic bells with the harp: a way for people to interact with music is being part of musical creation. Each bell rung by a person has a unique sound that the harp therapist may indicate the time to be sounded. Everyone can participate playing parts of the song.
- Association of sound and color: We can offer activities with colorful cloths to be moved with gestures that follow a song.

- Favorite youth music: in harp therapy, the practitioner needs to have a varied repertoire to be able to play songs especially appreciated by every client. In general, the most beloved songs are those heard between 15 and 25 years old. Therefore, you need to know music from several decades to be able to play for people at different ages.
- Relaxing music: although therapeutic songs are not widely known, it is important to play new things to old clients. Learning and new neuronal connections are made at all stages of life.
- Palliative care: the harp has been used as a therapeutic tool since antiquity among the Egyptians, Hebrews, Sumerians, Greeks and Celts. Tibetans and Egyptians read and sang aloud for people who were dying. In the Middle Ages, there was an improvement in the knowledge of the art of dying (*ars moriendi*), to be aware of the changes of that person was near death.
- Harp therapy continues a millennial knowledge about the therapeutic potential of music in terminal moments. It can be used as an aid in palliative care. It is not because death is near that there is no longer something to live for. The time of death is an opportunity for transformation. From the feeling of ones death, the person commits himself, more or less consciously, in an intimate working of material and relational ordering. Fears and beliefs get more prominent and feelings of guilt and failure to be resolved may appear. Elisabeth Kubler-Ross acknowledged some stages or reaction patterns: initially there is the phase of denial. When the medical diagnosis becomes irrefutable, comes the revolt. Then comes a negotiating phase, the phase of the bargain. When symptoms get worse, comes the phase of depression. Finally, one reaches the stage of approval or acceptance. Sometimes, in the last moments of a lifetime, redemptions operate.
- Who is close to death must be accepted and accompanied. The music played on the harp can bring comfort and create an atmosphere in which feelings of forgiveness and detachment emerge to facilitate the ultimate release. To assist in the transition is to be compassionately by the side of those who are dying. Trying to understand him or herself with one's own limitations and fears

and emanating energy of harmony and empathy for the person about to die can also make their synthesis and increase the understanding of one's process.



Inspired in music by the Mirabai Ceiba duo.

Mourning

The harp therapy work can continue to happen with the family of the person who left, providing comfort and peace. Mourning is a psychological, conscious and unconscious process, caused by the loss of an attachment object. There are several types of mourning: long, exaggerated, late, masked, unauthorized. Allowing yourself to experience grief is very important. Losses must be processed, synthesized so that a transformation occurs with the person. We can put ourselves next to the person so he or she can learn to accept the reality of loss, dealing with grief and helplessness, adapting and restructuring oneself again and go on living, even missing the person who left.

We can also help, playing for those who died, so that the consciousness that is freed from the physical body can continue its journey and deliver from the emotional body, and then the mental body. In many cultures, such as the Tibetan, we know that death is a

[23] Over you the Sun and the love around you / In you, the pure light to enlighten your way

process that involves many steps as the consciousness passes from one stage to another. We respect the belief of each client and we will only go until the point that is offered us the opening to act.

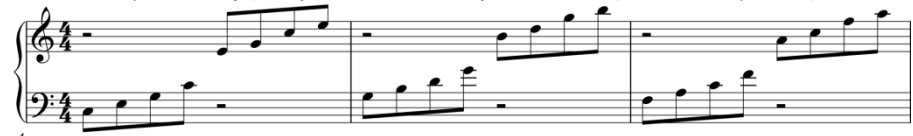
Hospitals

Since 2008 I regularly do activities in hospitals, in adults and children wards, hemodialysis rooms in chemotherapy rooms and even in ICUs. Many hospitals always welcomed my work with a lot of openness. I am very grateful to the professionals of the humanization sections of these places. In general, I invite my students to participate as interns. Together we form the group *Harps Angels*. There are numerous important events already experienced with the answer to my volunteer work, I report here only some of them:

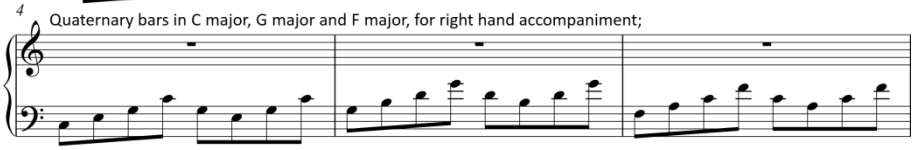
- I realized that to play for hospitalized babies brings calm and comfort of pure sounds among many noisy devices.
- Children in nurseries participate in many activities with the harp, asking questions and singing together.
- Hospitalized teens like to try playing the harp, and with them, it is interesting to make an interactive work of improvisation.
- Seniors are usually very sensitized with the musical visits.
- Health professionals working in hospitals as physiotherapists, nurses, psychologists and doctors sometimes asked to play for them too, in internal commemorative events or in their resting rooms.
- Once, when I went weekly to a hospital, a child who was in pain felt relief with music. The next week, he asked me to play the same melody, confirming me the welfare that harp therapy provided him.
- In patients with severe burns, I had the opportunity to play the harp while the physiotherapist helped them to make moves. The music at that time brought distraction and relief.

- A patient recovering from burns, hearing the harp for the first time, said: "*I love that sound*," then excitedly said: "*I am crying with joy, you changed my life*".
- The continuous activity with a definite rhythm, gives a distinctive character to the volunteer or professional work with the harp therapy. With repeated visits, it begin to establish links between me and my staff and the patients. There emerges the possibility of the musical activity not only be of entertainment and relaxation, but also a therapeutic job that helps in the transformation of individuals.
- When a person goes through a trauma and goes to the hospital, this represents a defining moment in one's life, it is often a crisis and an opportunity for him or her to review and redirect oneself in life. If, in such moments, people appear bringing new stimuli, ones consciousness can expand. Music has the ability to reach anyone, playing it in the background. In hospitals, there are many needs, so such work seems to be so welcomed and useful.
- Example of simple accompaniments, ternary and quaternary that can be made on the harp to the basic chords: tonic, dominant and subdominant major and minor.

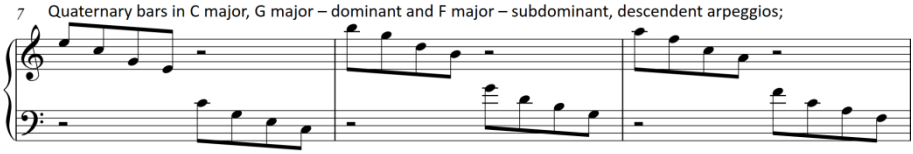
Quaternary bars in C major, G major – dominant and F major – subdominant, for vocal accompaniment;



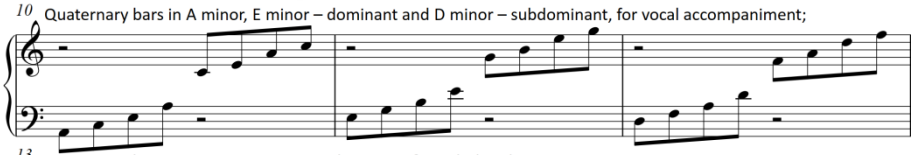
4 Quaternary bars in C major, G major and F major, for right hand accompaniment;



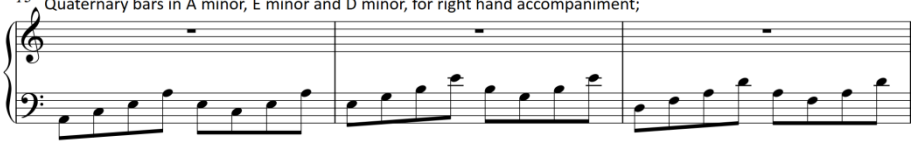
7 Quaternary bars in C major, G major – dominant and F major – subdominant, descendent arpeggios;



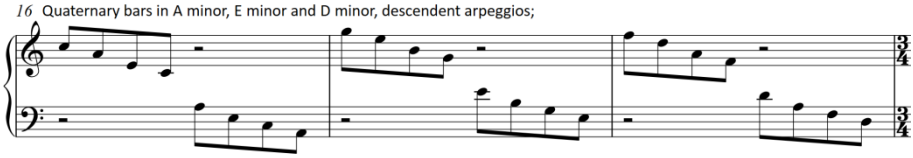
10 Quaternary bars in A minor, E minor – dominant and D minor – subdominant, for vocal accompaniment;



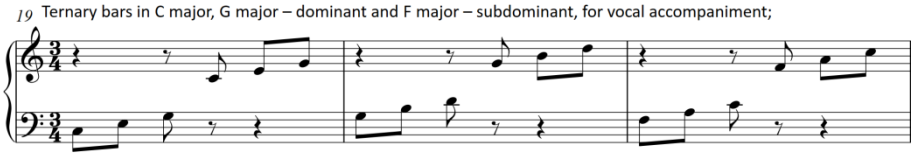
13 Quaternary bars in A minor, E minor and D minor, for right hand accompaniment;



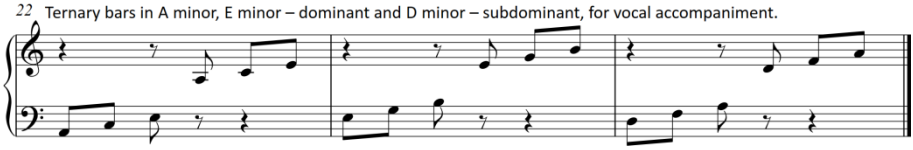
16 Quaternary bars in A minor, E minor and D minor, descendent arpeggios;



19 Ternary bars in C major, G major – dominant and F major – subdominant, for vocal accompaniment;



22 Ternary bars in A minor, E minor – dominant and D minor – subdominant, for vocal accompaniment.



Animals

Domestic animals, in general, love the sounds of the harp. I had a cat that ran to hear me play and stretched itself, relaxing. Wild animals can also calm down with these sounds. A harpist friend, Sue Raimond, often goes to zoos and veterinary clinics to play for them. In my project *Harps Angels* also includes harp therapy in abandoned animal shelters.

Catastrophes

We live in a time in which there are occurring great climatic, environmental, social, political and economic transformations. Every day we receive news of a tragedy in which massive losses occur. Also at those times, the harp therapy can be helpful. In an environmental catastrophe, receptivity to our harmonization work is more immediate. In the case of a terrorist act, for example, the generated trauma requires a longer time for those involved to assimilate and process the event. We will probably have to wait to act in the most appropriate time.

5 – Researches on sound relations

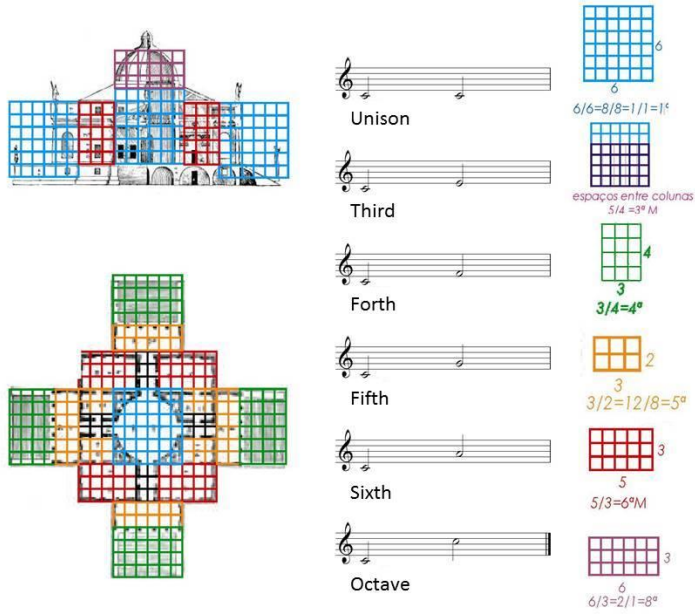
Good mood and purpose of universal life are two qualities to cultivate the joy of living and sharing the harmony in the world.

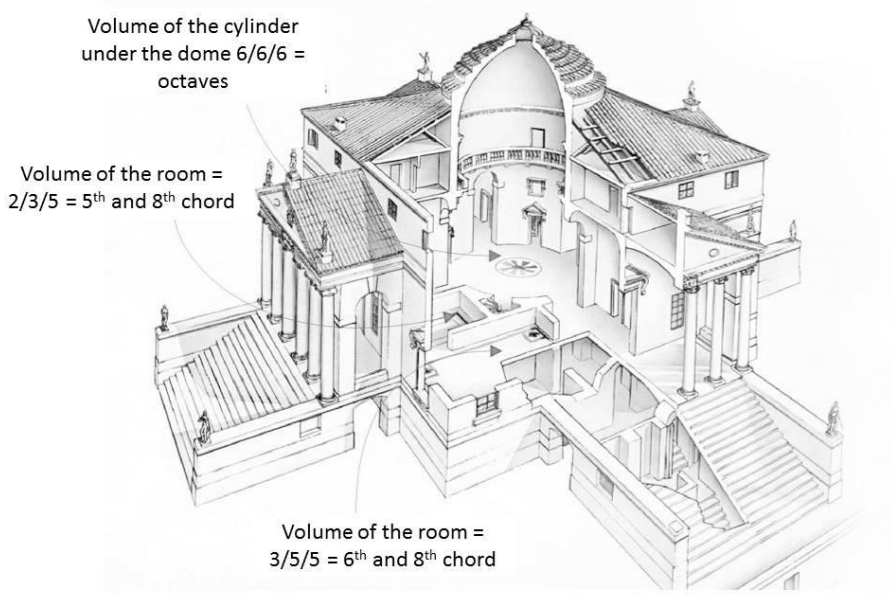
When I started a transition process from my activities as an architect to activities with music and with the harp, I had the need to make synthesis between the visual and sound universes. Therefore, I prepared a number of assumptions and charts trying to see relations between them. I also made several independent researches that I share here along with quoting of other authors' researches.

Architecture Music

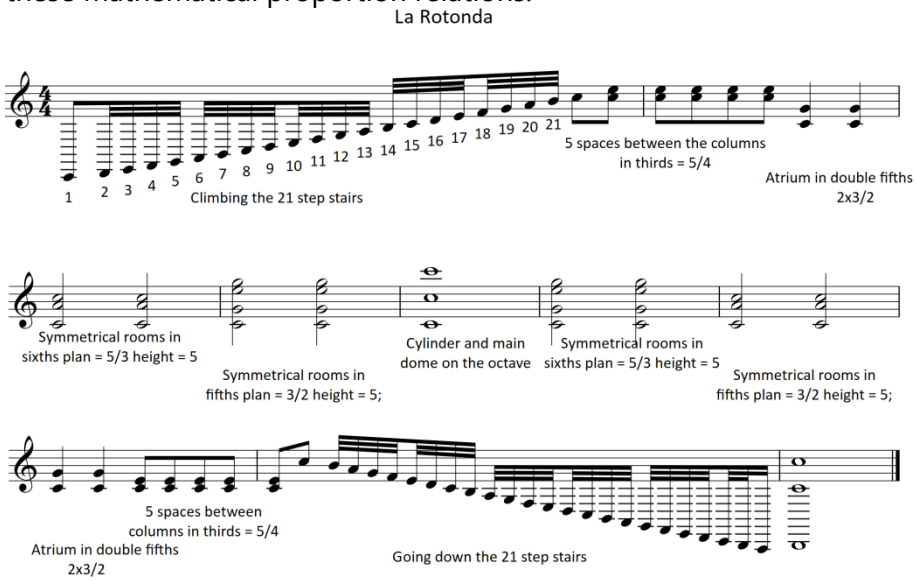
In my training in the course of Anthropomusic, I prepared a monograph called the Architecture Music. Anthropomusic is a music course in the approach of anthroposophy, movement created by Rudolf Steiner, organized by Marcelo Petragalia. I turned the Renaissance house Villa Rotonda, by the architect Andrea Palladio, in musical intervals with lengths proportional to its size, and then I created a song that resulted from this study. I investigated the possibility of a code that reflects the spatial shapes in music. I elaborated the hypothesis of this code being the numerical relations. Proportions of two numbers correspond to simple intervals between two notes and plane figures that are manifested in architectural facades and plans. If, for example, the fifth interval is 3/2, the 3/2 rectangle would be the formal equivalent to that audible range. The relationship between three shades could offer us a three-dimensional correspondence between width, height and depth. By the simplicity of the house, which is very symmetrical with four identical facades, and floor plan that comes down in a circle within a square, we can study these hypotheses in a very didactic way.

I turned the low house plan, the facade into rectangles. These rectangles represented by numerical fractions, which were in turn transformed into musical intervals of 2 notes. Then I grouped the intervals of the plan and the facade and found a chord of three notes to represent the volume of the architectural work.





Since the architecture is static in space and the music unfolds in time, I created a musical duration ratio for each architectural environment size. Stair steps correspond to eighth notes, a small balcony correspond a quarter note, an average room at a half note and a great room, a whole note. So I created a song for the home, based on these mathematical proportion relations.



While the relationship between sound and form, or between music and architecture, follows more objective, accurate and mathematical parameters in which we can find tones and exact rhythms to exact shapes, the relationship between light and sound comes into subjective areas of moods impressions. The light can give the dynamics of architecture, with its *crescendos* and *ralentandos*, with their *pianos* and *fortes* and can also give its tempo as *molto vivace*, *allegro* or *andante*. The soul sensation that a sensory perception produces makes a bridge with other sensory perceptions. Music with diminished intervals can cause a impression of penumbra or bitterness; music with balanced intervals can be sweet and light; and the augmented intervals can be spicy and glaring. The consonant intervals cause the impression of rest, closure, passivity, stability; tones complement each other. Dissonant intervals are active and unstable, causing the sensation of movement and tension; the notes are not completed. The sense of well-being and beauty they cause varied throughout the ages, and now, because we have access to

different styles, our ears are accustomed to more different sound combinations.

Art exists to promote experiences; the observer participates in the art. Each mode of artistic expression predominates in a dimension of life. Music has one-dimensional existence, painting, two-dimensional, and the architecture and sculpture are three-dimensional. The architecture, with its lighting and decor, in its landscape context, provides a setting; an environment where certain part of life occurs, where actions happen, feelings and thoughts arise. The music provides feelings, pictures, transformations. The way the arts are related or how the senses of perception blend is extremely subjective and complex. The light brings varied psychic feelings that need to be revealed in the spaces, such as lightness, tension, joy, sweetness, impetuosity, vividness, sharpness, clarity, and many others. It creates color and space; the sound, which is movement in time, creates forms that inhabit the space.

Mozart's music

Tomatis[24] studied the music patterns that reinforce attention, health and memory. Music is not just aesthetic. It is also a subtle and dynamic force that unifies the brain, the rhythm and tone of the human body. Music and physical body share similar organization on the pulse and heartbeat. Following his line of research, many scholars believe that the future of medicine will find the music a perfect medicine to help the body wellness. Edgar Cayce[25] predicted that once the sound would be the medicine of the future. Other neuroscientists have given valuable contributions to the understanding of music and the brain. The music of Mozart can boost the brain to wider functions due to the use of very ordered patterns of classical music. Dr. Tomatis found that Mozart's music soothed and

[24] Alfred A. Tomatis (France, 1920-25 - 2001) was otolaryngologist and inventor, with a doctorate in medicine from the Faculty of Medicine of Paris. Developed theories of hearing and listening known as the Tomatis method.

[25]Edgar Evans Cayce (USA, 1877- 1945) was an American paranormal.

improved spatial perception and allowed the listener to express himself more clearly. The rhythm, the melody, the excellence of execution and the high frequencies of Mozart's music clearly encouraged and impregnated the creative and motivational brain areas. But perhaps the secret of its magnitude is there because it sounds pure and simple, a song with grace, charm and simplicity. The structure of the rondó and *sonata-allegro* is the basic way in which the brain becomes familiar with the development of ideas. Don Campbell[26] was a musician researcher, author of *The Mozart Effect*, which studies the Tomatis theory. He advocated the use of *toning* of the human voice using vowel sounds sustained as a healing process, which can help the brain achieve frequencies that facilitate altered states of consciousness. Valborg Werbeck[27], together with Rudolf Steiner studied the therapeutic use of the voice from the study of the phoneme ng, intermediate between vowels and consonants. The use of grumbling is a great self-healing tool. One can ask the patient to sing vowels such as o/oh/awah/eh/ih/e and put the question: *where do you feel resonate the vowels and the pitch?*

Vibroacoustic therapy

The term vibroacoustic therapy appeared in the 80s in Norway. In this type of therapy, the patient lies in a bed that has built-in speakers. Low frequencies are produced by devices and led directly to the body. It has demonstrated efficacy in the treatment of rheumatism, muscle spasms, lung disorders, insomnia and lymphedema. In 1990, Sarajane Williams created the vibroacoustic harp therapy for individuals

[26]Don Campbell (USA, 1947-2012) studied the transforming power of music and listening, and expanded the definition of The Mozart Effect, proposed by Alfred Tomatis. For him, music is transformational, can transform intelligence, health, emotions and creativity.

[27]Valborg Werbeck-Svärdström (Sweden, 1879-1972) was a singer and voice teacher. He wrote the book The Voice Unravel School - one path to redemption in the art of singing.

suffering from depression, anxiety, stress, fibromyalgia, chronic fear and other average conditions.

Psychoacoustics

It is the perception of sound; this includes how we listen and respond, and the impact of music and sound in the nervous system. The main purpose of the ear is to recharge the internal batteries. The first function of the ear in the womb is to govern the growth of the rest of the body. After the birth, the sound becomes to the nervous system as a food that nourishes the brain with electrical impulses. Joshua Leeds is a researcher in the psychoacoustic area.

The sound of DNA

When I was studying music therapy at the University of Minas Gerais (UFMG), I elaborated together with two colleagues (Maycon Abreu and Welder Ramon) this work of musical compositions for amino acids to the subject of genetics. In the study of DNA molecules and proteins, Ohno & Ohno (1986) propose that the meaning of proteins and music have a similar origin: the repetition and elaboration of thematic sequences. They explore a common type of structure to music and protein sequence: the palindrome (something that can be read both in the direct sense, as in reverse). It describes the structure of a mouse's Histoin H1 in which he found palindromic sequences of peptides overlapping each other, occupying 115 of the 212 amino acid protein. Most of these sequences contained 14 residues KAVKPKAAKPKVAK. In protein databases, each amino acid is represented by one letter of the alphabet: A = alanine / C = cysteine / D = aspartate / E = glutamate / F = phenylalanine / G = glycine / H = histidine / I = isoleucine / K = lysine / L = leucine / M = methionine / N = asparagine / P = proline / glutamine = Q / R = arginine / S = serine / threonine = T / valine = V / W = tryptophan / Y = tyrosine.

Thus, the KAVKPKAAKPKVAK sequence can be rewritten as lysine, alanine, valine, lysine, proline, lysine, alanine and repeating this in

mirroring. Triads of nitrogenous bases AAA or AAG form the amino acid lysine. GCU, GCC, GCA and GGG form alanine. The valine is formed by GUU, GUC, GUA or GUG. And proline is formed by CCU, CCC, CCA or CCG. Then, substituting the amino acids by triads of nitrogenous bases that sequence, we get:

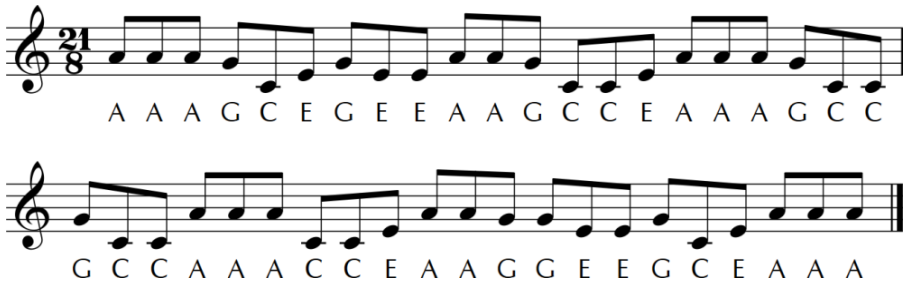
AAA GCU GUU AAG CCU AAA GCC GCC AAA CCU AAG GUU GCU AAA

The biologist Ross King and the musician Colin Angus (King & Angus, 1996) produced a musical piece based on the transcription of the protein S2 (a membrane receptor for the neurotransmitter serotonin).

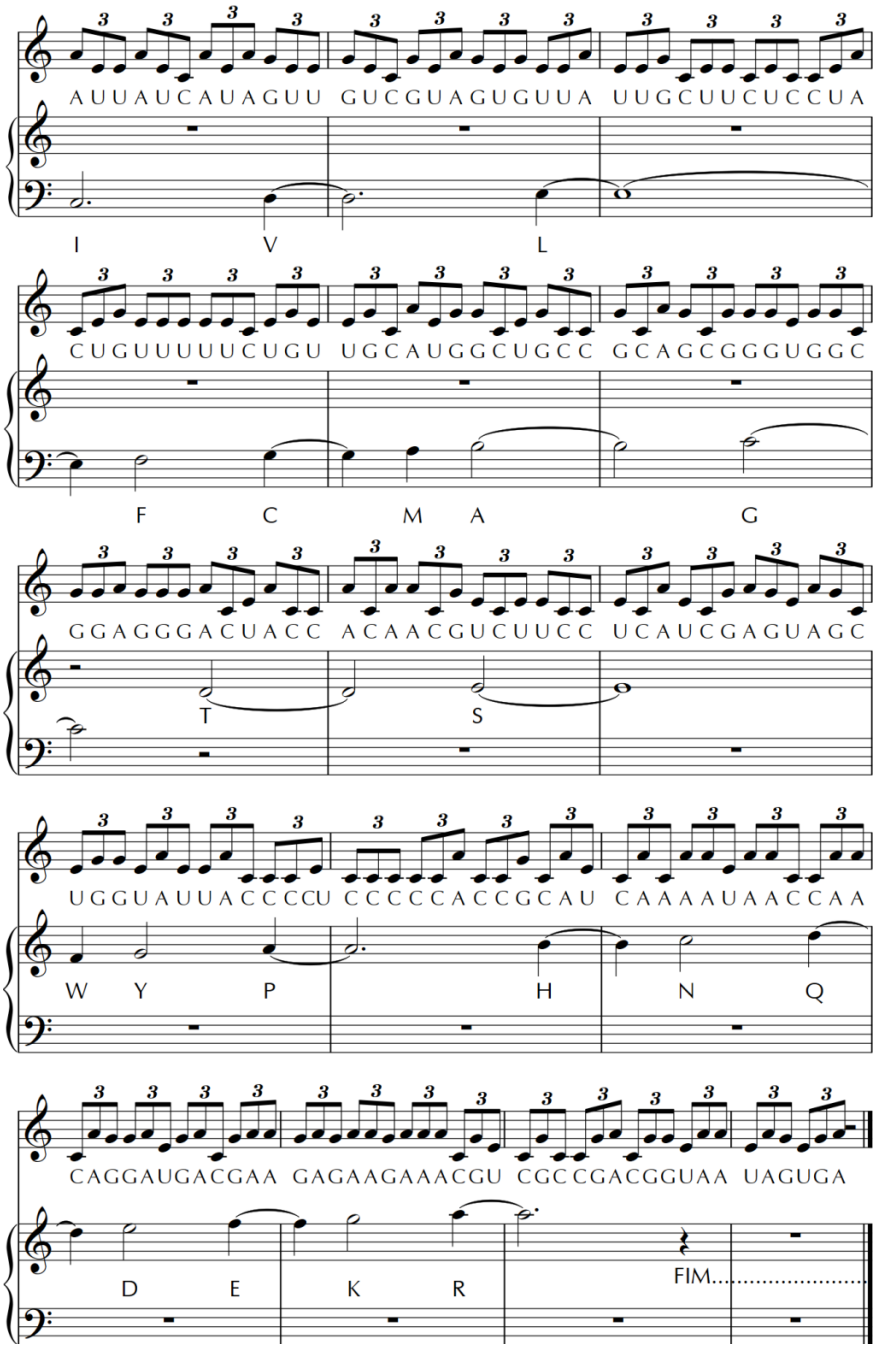
For the four DNA bases the tones were associated, A, G and E to cytosine, adenine, guanine and thymine (a little irony related to the name of the composer John CAGE, who claimed that music could be extracted from everything around us).

Interesting this association between notes and DNA bases, because just as cytosine and guanine complement each other, C and G form a perfect fifth; Adenine and uracil (RNA) or adenine and thymine (DNA) are complementary too, as well as A and E form a perfect fifth. C - E - G form a perfect major chord and A - C - E form a minor chord. With only four notes, we have a wide variety of combinations. In the sequence AAA GCU GUU AAG CCU AAA GCC GCC AAA CCU AAG GUU GCU AAA we can replace U by E and convert letters into notes:

AAA GCE GEE AAG CCE AAA GCC GCC AAA CCE AAG GEE GCE AAA



Below we have a music sheet of all amino acids: In the lowest voice there are the 20 letters corresponding to them; and in the highest voice, all possible combinations of triads associated with them.


AUUAUCAUAGUU GUCGUAGUGUUA UUGCUUCUCCUA
I V L
CUGUUUUUCUGU UGCAUGGCUGCC GCAGCGGGUGGC
F C M A G
GGAGGGACUACC ACAACGUCUUCC UCAUCGAGUAGC
T S
UGGUAUUACCCCU CCCCCACCGCAU CAAAAUAACCAA
W Y P H N Q
CAGGAUGACGAA GAGAAGAAACGU CGCCGACGGUAA UAGUGA
D E K R
FIM.....

Using the Resonant Tone for Homeostasis in Hemodialysis

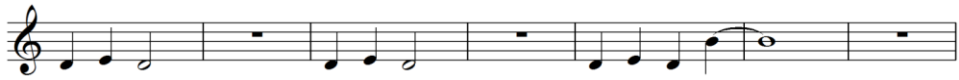
In 2014 I did volunteer work for a few months in the hemodialysis[28] room of a hospital. As a result, I prepared an article to record the result of the research on the ability of vibrational sound adaptation with people often exposed to specific environments in which predominate repetitive sounds. I presented this article in the International Harp therapy Congress in San Diego in March 2015 and, in partnership with my English friend Bay Deane, we published in the Harp Therapy Journal, coordinated by the competent Sarajane Williams, whom I thank very much for the openness and encouragement she gave to my work. This research presents reflections on ways of using sound energy as a matching tool of harmonization of sounds that improve stress, with examples of use of consonance and harmony to dispel noise and dissonance. The research took place in a hemodialysis room of a hospital where there was a change in the way patients evaluated the process they were subjected to, from the proposed sound intervention, starting to the express understanding and conscious acceptance of treatment. Music therapy has been used as a resource to balance vibrations of an environment, providing greater calm, integration between patients and the team of health professionals, and bring clarity about the evolutionary significance of a compulsory rehabilitation process.

The music in hospitals is a humanization feature not linked to any philosophical or sectarian manner. Its use can bring people together and have Universalist action. Turnover in the wards of a hospital is frequent, so the musical work in these places tends to be just entertainment - music, to be considered as a mediator in music therapy, should be a continuous process, where there is closer relationship between therapist and patient. In a hemodialysis room, the situation is different because the patients need to go to the

[28] Hemodialysis is a treatment that consists in removing the liquid and toxic substances from the blood as if it were an artificial kidney. It is a therapy performed in patients with acute or chronic renal failure, since in such cases the body cannot eliminate such substances due to failure of renal excretory mechanisms.

hospital for one to three times per week. Therefore, it is possible to propose a more consistent music therapeutic intervention to a relatively stable group there. Considering the characteristics of the procedure and the group of people undergoing treatment, musical proposal was made to integrate the sounds of the environment, including the noises and sounds of the machines, combined with melody of tones alike the tones of the voices of patients, and lyrics with enlightening and peacemaking meaning. We tried to use the sympathetic reverberation of tones as a resource to enable the homeostasis of patients and also of health professionals in the room.

The same group of people attends the hemodialysis room weekly for a period of 4 hours per day. It was found that the machines there emit sounds with frequencies fixed to non-regular intervals, with variable pauses, always with the same "melody". From there came the proposal to create a song using the musical elements in the environment in an attempt to harmonize them. The machines sometimes emit the notes D, E, D; sometimes they add a long B note. The sounds indicate the execution of certain functions, such as the completion of a stage of the procedure (blood filtering) or the full completion of the procedure. There are, in the environment, 22 patients linked to 22 machines, so we hear from time to time these frequencies.



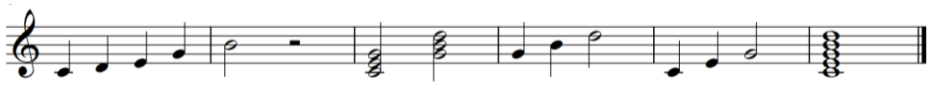
We made an individual evaluation of each patient to check the tone of his voice and comparing it to the harp. Each sound has a frequency and the voice of each person vibrates in a lower or higher tone.

	Name	Voice tone		Name	Voice tone
	R.	B		G.	E – G
	A.	E		C. A.	E
	E.	E		J. F.	B
	J.	Doesn’t speak		V.	B
	E.	Eb		M. R.	E
	S.	C		C.	D
	M. I.	Eb		V.	C
	M. D.	D		R.	D

	J. F.	D		M.	G
	R.	D		H.	E
	J.	G		A.	B

Among the 22 people present in the room, 12 men, one deaf boy who does not speak, 8 women and 1 girl, 6 people expressed in their voices the E note; 5 expressed D; 4, B; 3, the Eb (note between D and E); 3, G and 2, C. Interestingly, notes that most appeared in the room were the same notes of the sounds of machines: D, E and B. F and A did not appear in the sound sample of the environment (voices of patients and sounds of machines).

Proposal for harmonizing sound intervention: Analyzing the data, we assumed that patients subjected to frequent exposure to regular rhythm to sound vibrations of an environment, they came into resonance with those sounds and began to manifest sounds alike. We interpreted the data on the musical notes present in the hemodialysis room as a pentatonic scale (5 tones), the diatonic of 7 tones without F and A: C, D, E, G, B. We also assumed that these notes present in that environment would belong to two major chords: C major (C, E, G) and G major (G, B, D). We also inferred that these notes belong to the C major chord with 7th and 9th (C, E, G is the C major chord, with the 7th interval, it is added the B, and, with the interval of 9th, it is added the D). This chord is widely used in Brazilian music and that reinforces the sound identity of the group, whose favorite songs are from the popular Brazilian repertoire. The first idea to harmonize the sounds was doing improvisations with the notes C, D, E, G and B emphasizing the D, E and B to enable sync with the notes of the place. Continuous repetition of the 2nd interval (D-E) and then the sound of the note B (7th degree of C major scale) creates tension in the environment. By including these notes in C major chord with 7th and 9th, these sounds are "resolved", so they harmonize. The sound in the room is boring, full of noise and causes irritation and boredom. This research tested and proved that the use of tones in order to change the mood of patients and their relationship with the environment is effective.



Still studying the notes present in the hemodialysis room, we found that the B note within the C major scale forms with the fundamental, C, an interval that is considered dissonant, it causes a sensation of movement, tension and instability, there is a vibratory rate, it is the 14th interval to appear in the harmonic series, that is, a remote harmonic. The first harmonics are the most consonants and pleasant sounds that provide the sensation of rest and stability. The D and E notes appear as 8th and 9th harmonics of the harmonic series and form between them a 2nd interval, also dissonant. The chord of C major is consonant, formed by the perfect fifth (C, G), which is the 2nd harmonic and the major 3rd (E), which is the fifth harmonic. When using the C major chord with 7th and 9th all dissonant notes are included along with consonant notes - which provides a pleasant feeling.

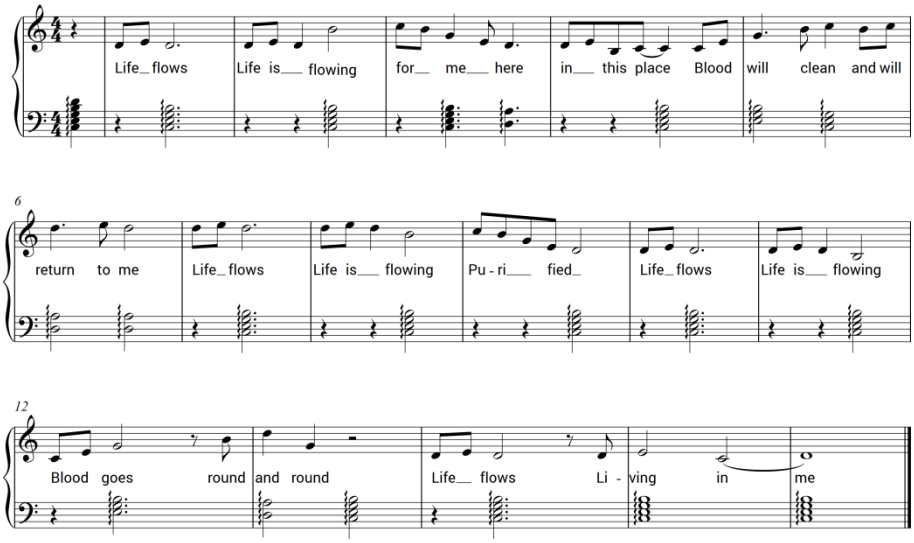
As a result of the research conducted in the hemodialysis room, there came the composition of a song specifically aimed to patients. Only the notes in the environment were used: C, D, E, G, B, forming often the C major chord with 7th and 9th. It was repeated several times melodic pattern of the machine. The music has a leisurely rhythm that provides relaxation and peace. Thus, we tried to make a link with the sound identity of the place and to harmonize it with tones that provide rest. I created a lyric to the melody: *Life flows, life flowing to me, here, in this place. Blood will clean and come back to me. Life flows, life flowing. Purified. Life flows, life flowing. Blood goes back and forth. Life flows, living in me*. This lyric seeks to record the real meaning of what goes in that place to make the patients self-conscious of the function of that procedure. It was intended that the set of thoughts, feelings and experienced energy in the room such as pain, discomfort, monotony, could transform itself by the understanding of the meaning of the function of the treatment. The proposed musical intervention was both passive (patients listened to the harmonizing melody played on various instruments and sung) and active (they played some simple percussion instruments that can be activated with only one hand - since one of the arms is used for blood collection - and used their voices to sing).

The result of this musical intervention showed that patients started to have greater conscious acceptance of the necessary treatment

condition in that space and understanding of the process of filtering the blood as a source to keep the extra physical life based on physical. We observed in some patients feelings of gratitude and reconciliation. The repetitive sound of the engine gained significance, it was incorporated. Health professionals also interested in the process and got involved. The overall energy was joy, commitment, participation, interest, quality of life, understanding, positivity, affection, brotherhood.

Hemodialysis

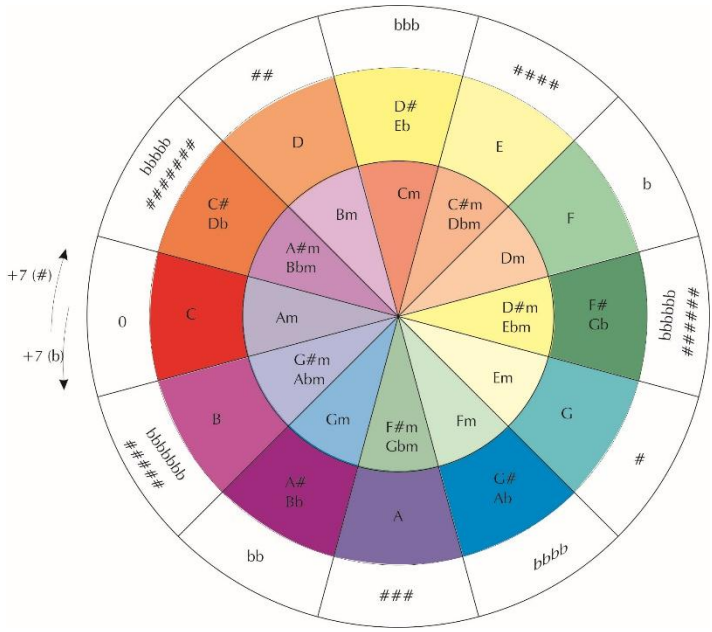
Cláudia Miranda



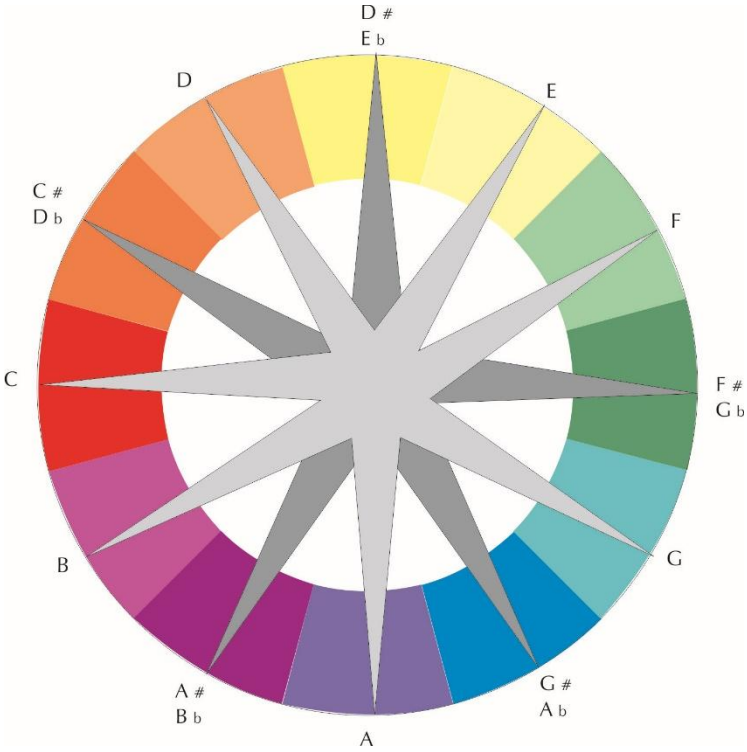
6 – Graphic representations of sounds

Relax, slide your fingers across the harp strings in a glissando and realize: what question comes now?

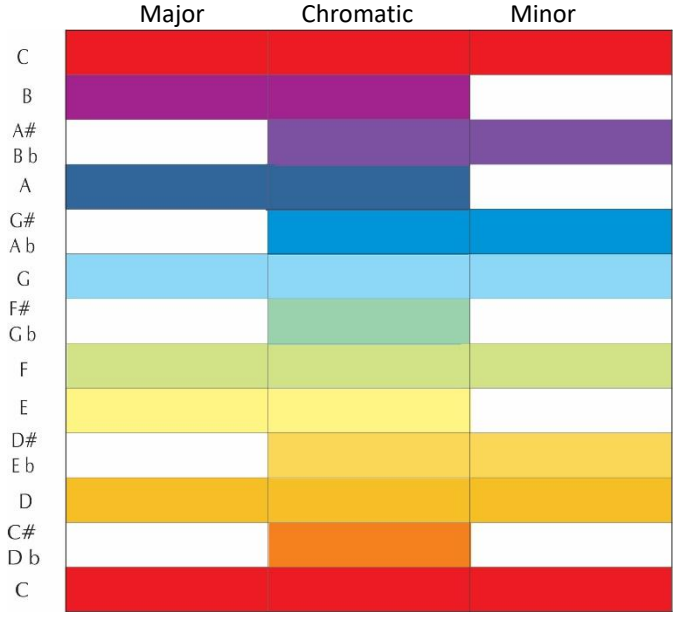
Musical notes are placed in tonal and chromatic sequence in an outer circle that corresponds to the major scales; and in an inner circle, corresponding to minor scales. From the C major tonality, walking 7 in 7 steps on the right, a sharp is added to every tonality; and making way 7 in 7 steps to the left, a flat is added to every tonality.



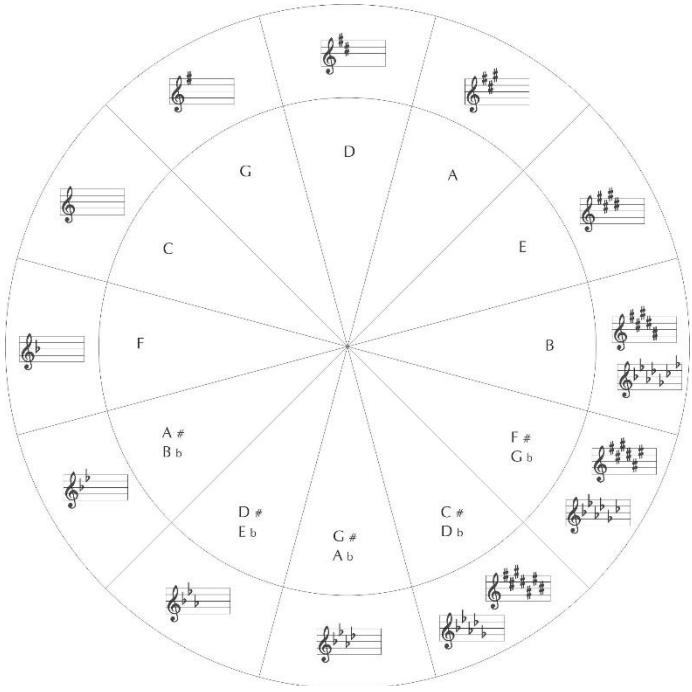
The next graph shows the 7 diatonic notes (corresponding to the white notes on the piano) and 5 accidented notes - sharp or flat (black notes of the piano):



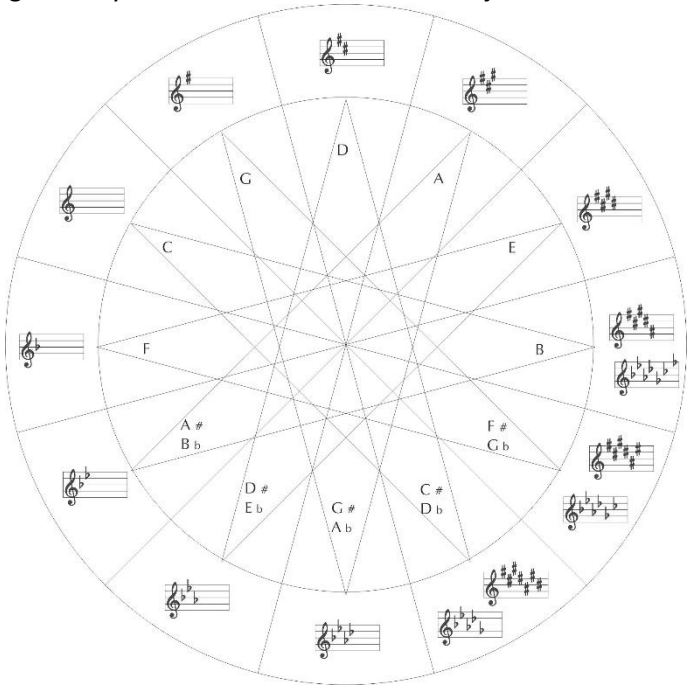
The 12 major and minor scales are the following:



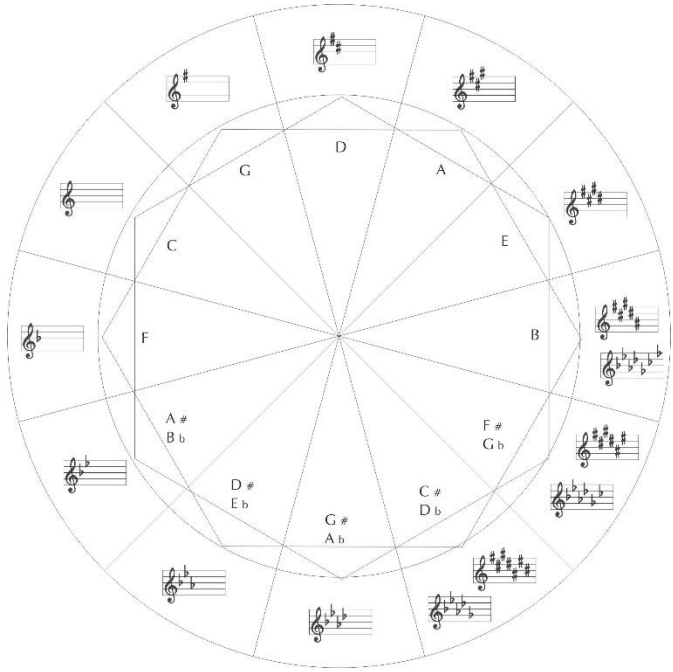
The twelve semitones can be represented in a circle whose neighbor tones are intervals of fifths:



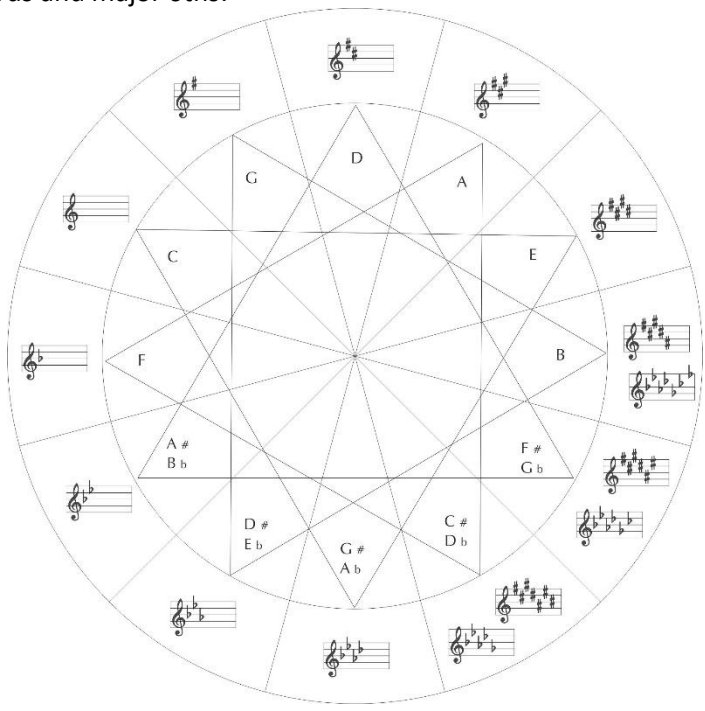
Next, the geometry of the minor 2nds and the major 7ths:



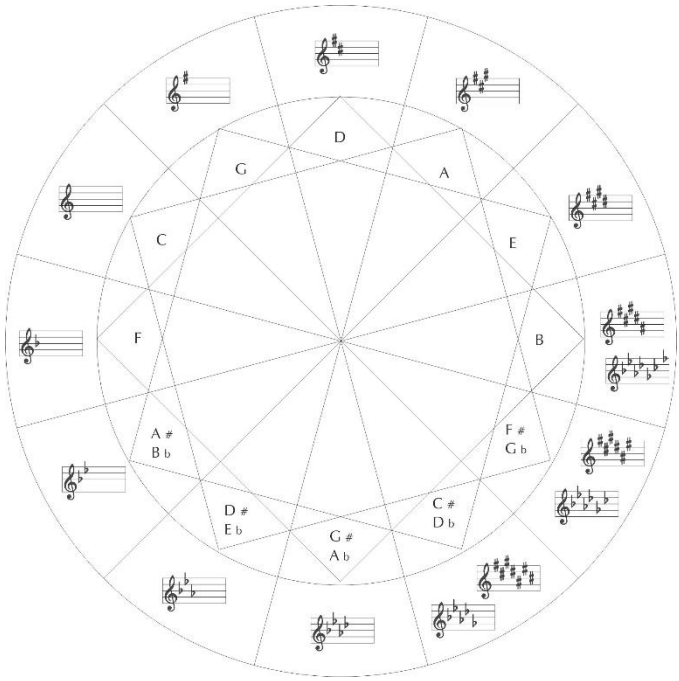
Major 2nds and minor 7ths:



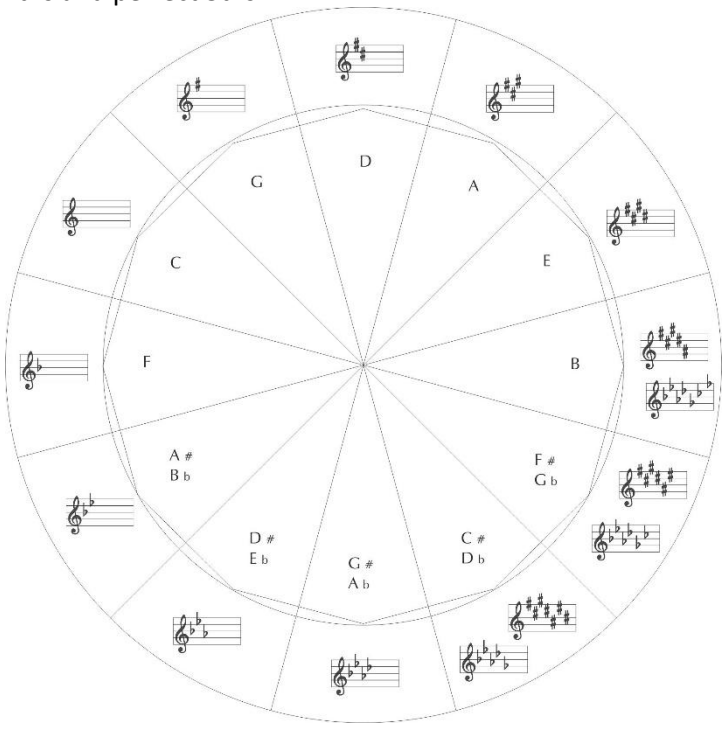
Minor 3rds and major 6ths:



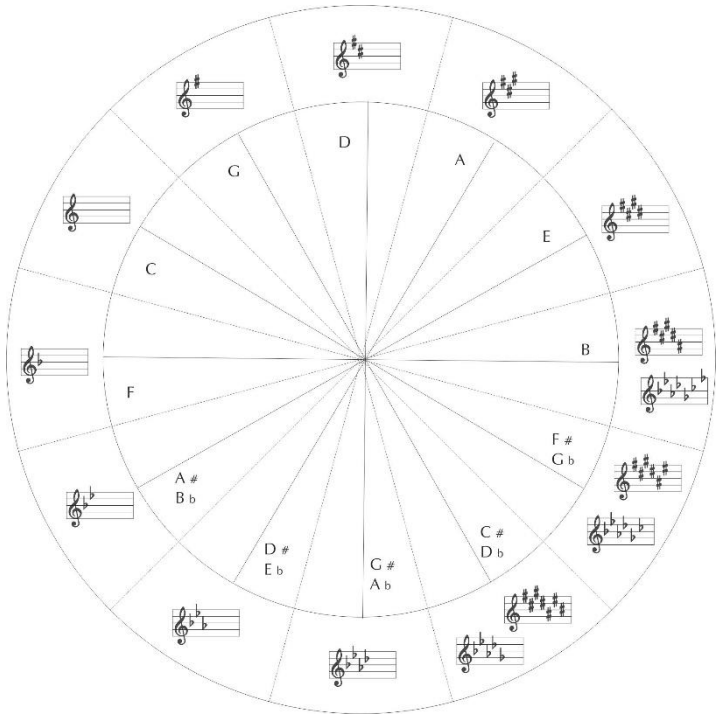
Major 3rds and minor 6ths:



Perfect 4ths and perfect 5ths:



Augmented 4ths and diminished 5ths:



7 - Modes and ways

Staying in a state of calm, of peace, of relaxation. Recognize what is best in yourself, valuing your own potential. Be with yourself and in connection with the universe.

Mode is the way, shape, character, trend, temperament, mood of structuring sounds of the scale.

The so-called Greek modes are ways to form diatonic scales. Each mode has a sound, a specific flavor, an ethos or moral character. They were developed in ancient Greece and its importance was related to understanding the feelings that music provokes practitioners and listeners. Thus, each mode was related to certain temperament qualities, humor, trend, way, character and way of people, some being more appropriate to the collective life than others. Pythagoras taught that music was a universal language based on mathematical intervals and so we could create inner balance and harmony in our lives by aligning ourselves to greater universal harmonies: the harmony of the spheres. For him, the universe was created through the breathing vibration of the sound; therefore, as individuals, we should be captivated also by the sound and music. The ancient philosophers knew that music can have positive and negative effects. Listening to music would take us to the tempo and rhythm qualities, to the divine order and to patterns and proportions. Socrates and Aristotle also talked about the effects of modal music on the human psyche. Plato valued especially two effects of music: what drove the moral and what pacified. The ancient Greeks attributed the *ethos* of Doric mode as the best for education. Aristotle said that music gives soul to the universe, wings to the mind, flight to the imagination, charm to sadness, joy and life to everything. It is the essence of order and it leads to all that is right, good and beautiful.

Also in ancient China, the rulers used the knowledge of the effects of music to their interests.

The musical modes were given the names of the regions of Greece where they were most familiar (Ionian, Dorian, Phrygian, Lydian, Aeolian). Each mode has a different structure to form a scale and that gives them a very distinctive and unique feature that brings, as consequence, a feeling and sensitive response with its own flavor. The Greek scales were descendants and the accurate record of how the modes were was lost. In the Middle Ages, Pope Gregory I adapted these forms of musical structure, reversed the sense of the scale upwards and established twelve musical, authentic and plagal modes (a fourth below the authentic ones): Doric, Hipodoric, Phrygian, Hipophrygian, Lydian, Hipolydian, Mixolydian, Hipomixolydian, Ionic, Hipoionian, Aeolian and Hipoaeolian. In the Renaissance, Marsilio Ficino rescued knowledge of the musical effects on health left by the Greeks and propagated the use of modes associated with the therapy, harmonization of moods and temperaments. Renaissance Neoplatonists believed that the body's disease could be cured by sympathetic resonance between the individual and the divine harmony of music. The idea was to tune the mind to receive the most beneficial inflows for the patient, according to correspondence to specific archetypes. Thus, only considered the authentic modes of the Middle Ages (did not use the plagal) and added the Locrian mode to the group, forming 7 modes that were initiated in each of the seven degrees of the natural scale. Each mode has a distinct structure of intervals of tones or halftones.

Following the natural scale, the first mode begins in C, it is called Ionian and has the following structure (T = tone, s = semitone): TTsTTTs. The second mode, Doric, begins in reverse: TsTTTsT. The third, Phrygian, begins in E: sTTTsTT. The fourth, Lydian, begins in F: TTTsTTs. The fifth, Mixolydian, begins at G: TTsTTsT. The sixth, Aeolian, begins in A: TsTTsTT. The seventh, Locrian, begins B: sTTsTTT.

The modes can be placed in a gradation of the most constricted, tight, diminshed and dark, to the more expansive, open, augmented and clear in the following order: locrian (B), Phrygian (E), Aeolian (A), Doric (D - is the more balanced), Mixolydian (G), Ionic (C) and Lydian

(F). In modern music, they are only used two ways, the major (derived from Ionian mode) and the minor (derived from the Aeolian mode), which are directly related to the brightness and darkness, respectively.

Locrian: It sounds strange to the ear, does not offer a support point. We can use this mode in terminal movements just before the last breath. It pacifies, is mysterious, promotes changes.

Phrygian: It has dark quality, is introspective and may have passionate character have when played at a fast rhythm (like the flamenco style). It brings a bit of melancholy, it is good for patients who need to cry and have laxative effects. Dramatic, passionate, like the rain, soft, solemn, melancholic.

Aeolian (originated smaller scale): It is deep. Good for patients who lie in fetal position. Poetic, quiet, ethereal, helps in remembrance.

Doric: It prepares soldiers for war. It is used in hospitals for patients who want to walk. For disorientated people, children with ADHD. It was used in Gregorian chants, it relates to hard work, zen garden, rituals.

Mixolydian: Many Celtic songs use this mode. It brings images of the sea, suggesting a soft, contemplative pulse. It is reflective, open. Used in Brazilian Northeastern folk music.

Ionian (originated the major mode): Used especially for babies in ICUs. Very family friendly, happy, peaceful, curious.

Lydian: Capricious. It is good for patients who are happy. Cheerful, dancing, bright, energetic.

Angelic mode: In addition to the 7 modes above, there is also the angelic mode, name used in therapy harp to the pentatonic mode with 5 spaced notes in tone, tone and half, tone, tone and a half, tone. It expresses beauty, softness, gentleness, magic.

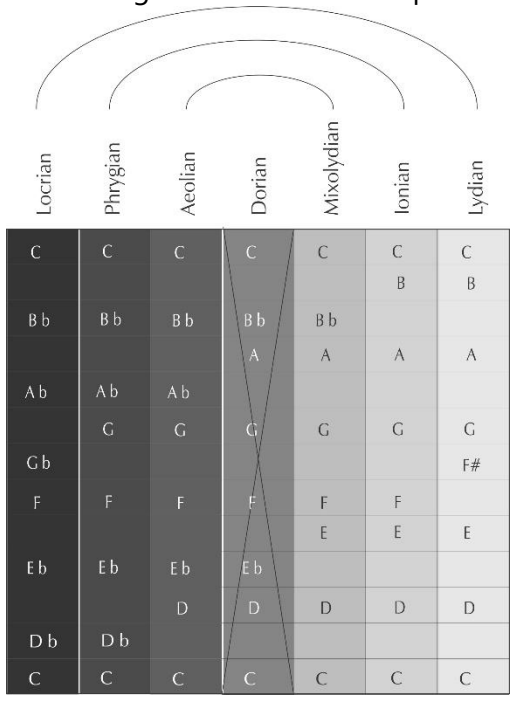
	Ionian	Dorian	Phrigian	Lydian	Mixolydian	Aeolian	Locrian
B							B
A#B b							
A						A	A
G#A b							
G					G	G	G
F#G b							
F				F	F	F	F
E			E	E	E	E	E
D#E b							
D		D	D	D	D	D	D
C#D b							
C	C	C	C	C	C	C	C
B	B	B	B	B	B	B	B
A#B b							
A	A	A	A	A	A	A	
G#A b							
G	G	G	G	G	G		
F#G b							
F	F	F	F	F			
E	E	E	E				
D#E b							
D	D	D					
C#D b							
C	C						

Greek modes in natural scale and their intervals

The Greek modes can be represented in a chart in which all start at the C note and are placed in the order of the tighter and more widely spaced intervals, giving sensations from the most constricted to the most expansive.

Locrian	Phrygian	Aeolian	Dorian	Mixolydian	Ionian	Lydian
C	C	C	C	C	C	C
					B	B
B b	B b	B b	B b	B b		
			A	A	A	A
A b	A b	A b				
	G	G	G	G	G	G
G b						F#
F	F	F	F	F	F	
				E	E	E
E b	E b	E b	E b			
		D	D	D	D	D
D b	D b					
C	C	C	C	C	C	C

The modes are mirrored in pairs. The Locrian ascends at intervals equal to the way the Lydian descends. The Phrygian is mirroring the Ionian; and the Aeolian, the Mixolydian. The Doric is symmetrical, the ascending and descending movements have equal intervals.



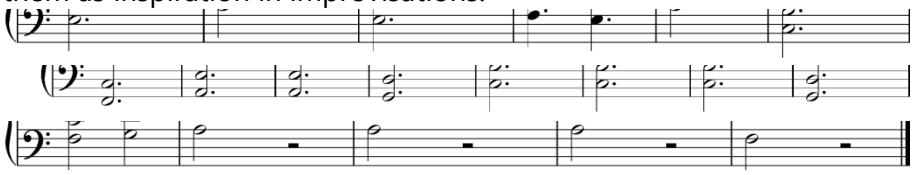
I will give a practical example of the use of modes: Suppose we go to a hospital and we find a severely debilitated patient in a lot of pain. We realize his anguish and play in the Phrygian mode, in an introspective way to establish a relation with his feeling. We ask ourselves, *where can we help him? Where to go now?* Then we can realize his desire to improve; then we modulate to the Aeolian mode, to bring him memories and more affective emotions. With music, he can feel more relieved, comforted, sheltered.

Now suppose that as we ask where we should go with the modal improvisations, we realize that the patient is at his terminal point, near his transition to another dimension of consciousness (in other words, he is almost at the time of his death), then, in that case, we can play the locrian mode. Thus, we welcome his innermost need and create a liberating sound atmosphere that allows him to leave the material world.

Each case is unique and we have no recipe in harp therapy. We try to do the best we can in the most charitable and humanitarian way as possible, knowing that we are mere instruments within a broader awareness plan.

Modal improvisations are very useful for individual use as receptive music therapy to be offered to a patient. The modulations from one mode to the other follow the circle of fifths and the graph shown previously.

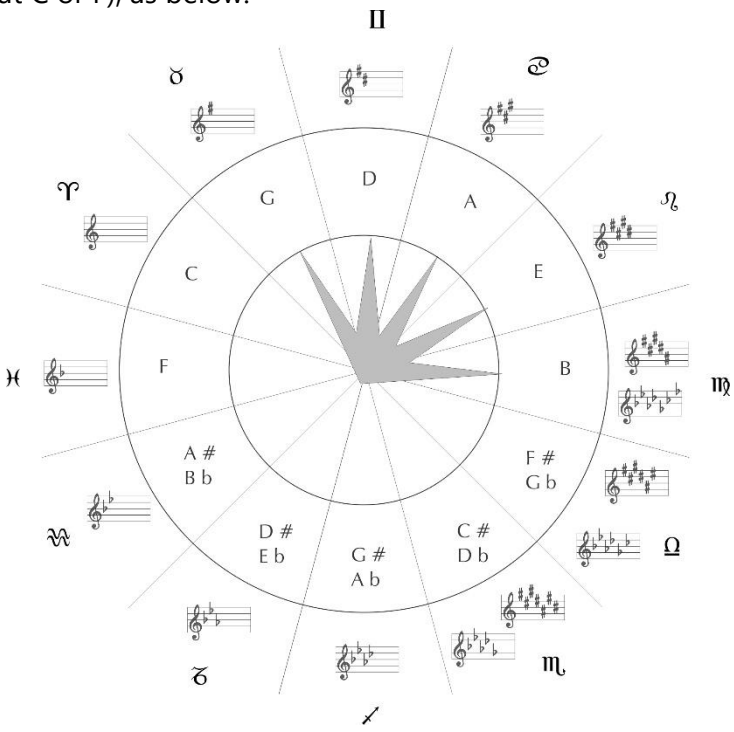
Next, there are music sheets of typical known songs of each mode written in the sequence from the most introspective to more extroverted modes (Locrian, Phrygian, Aeolian, Dorian, Mixolydian, Ionian, Lydian), written in C major and its tonic are respectively B, E, A, D, G, C and A. It is good to know classic modal examples and use them as inspiration in improvisations.



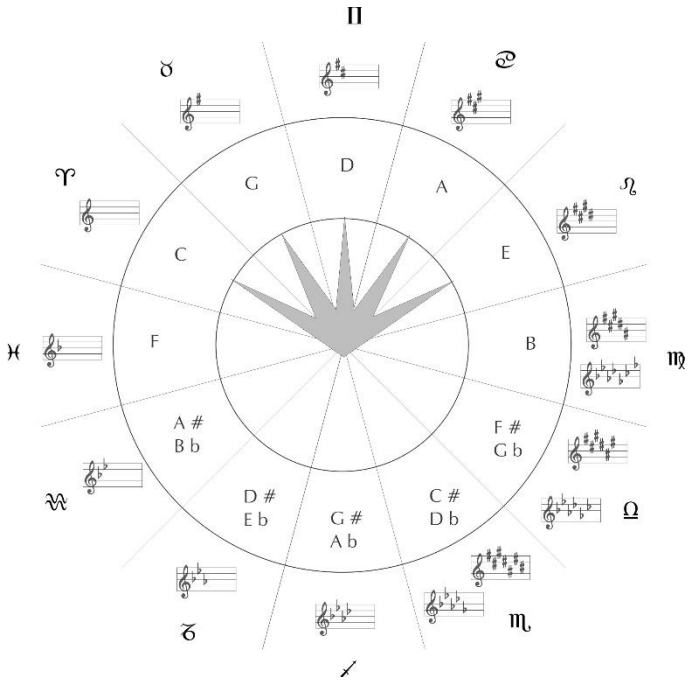
8 – Pentatonic scales

The sound of the harp brings the realization that we are a bridge between worlds and dimensions. We can stay in peace and harmony, consciously, with lucidity, present in the here and now, full.

The two scales of 5 most common notes to be used originate from the diatonic scale. In anthroposophy, it is used the D-E-G-A-B scale (without C or F), as below:



In Chinese medicine, the five Chinese elements can relate to musical notes: Wood - A, Fire - C, Earth - F, metal - G, and Water - D. The pentatonic scale used is the C-D-E-G-A (no F or Si), as the following:

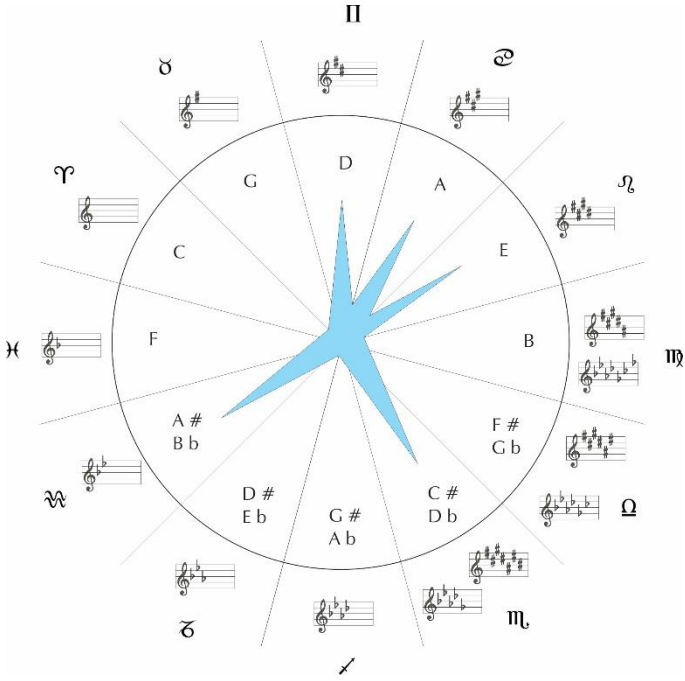


There are other ways to form pentatonic scales. Fabien Maman is a musician, composer, acupuncturist, author, researcher, teacher. He was the first to unite acupuncture, color and sound. He researched the impact of sounds on human cells. He found out that every cell feels a vibratory affinity with certain notes, the aura of the cell turns into a mandala of vibrant colors when it finds its note. Fabien concluded that each cell has its fundamental note and if the person tunes him or herself with it, harmony can be achieved. He created ragas of 5 notes from each of the 12 chromatic semitones for each station. Each tonality of the circle of fifths relates to a month of the year and with a zodiacal sign.

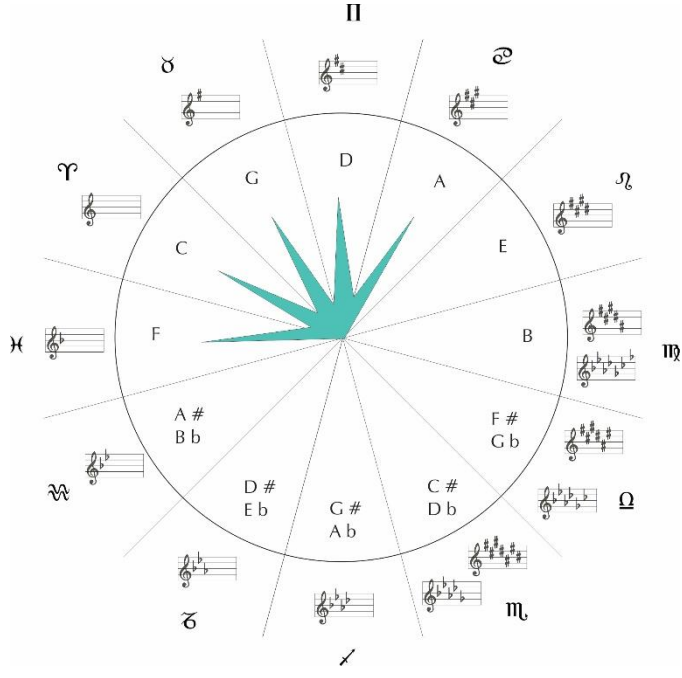
I got inspired in his work so I created different scales of five tones that provide interesting improvisations. To create a different pentatonic, I usually prepare the keys with the necessary sharps and flats and use a tape in two notes of the diatonic scale that I will not use, to remember not to touch them.

5 note scales allow you to create unique sonic atmospheres, at times exotic, unusual. Improvisations on these scales are very creative. I imagined seasons and colors to compose the Suite of Seasons, which will be part of a series called Star Sprouting.

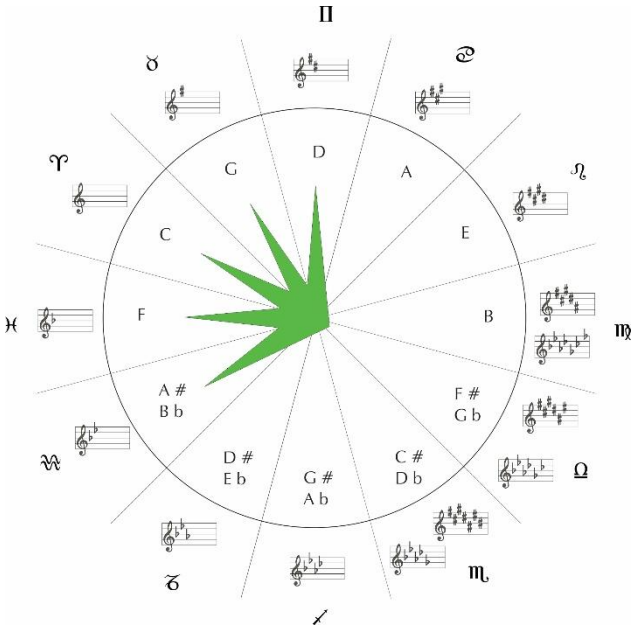
- Sky-Blue Spring: C#, D, E, A, Bb (*no F or G*)



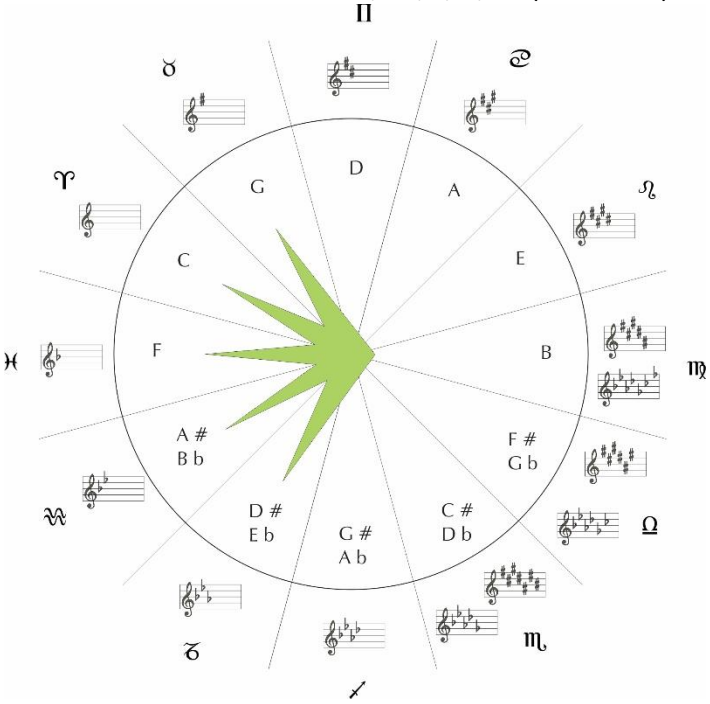
- Green-Blue Spring: C, D, F, G, A (*without E or B*)



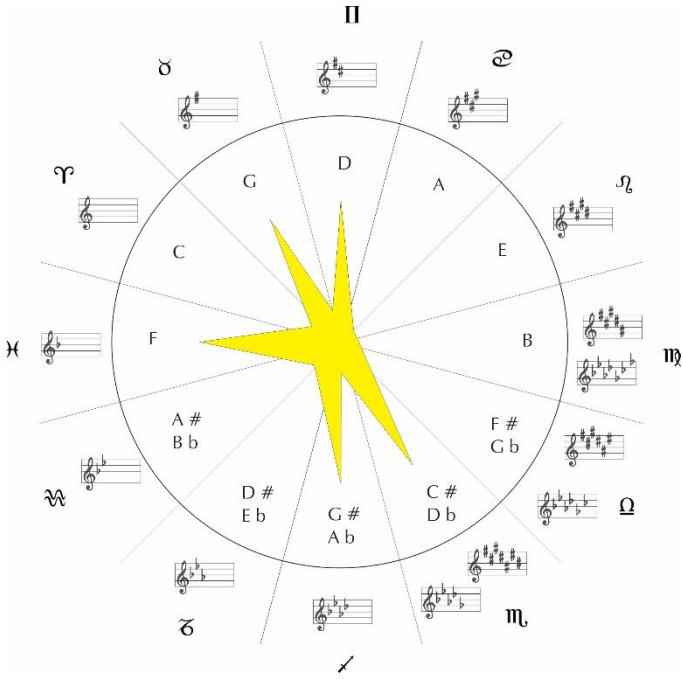
- Greenwood Spring: C, D, F, G, Bb (*no E nor A*)



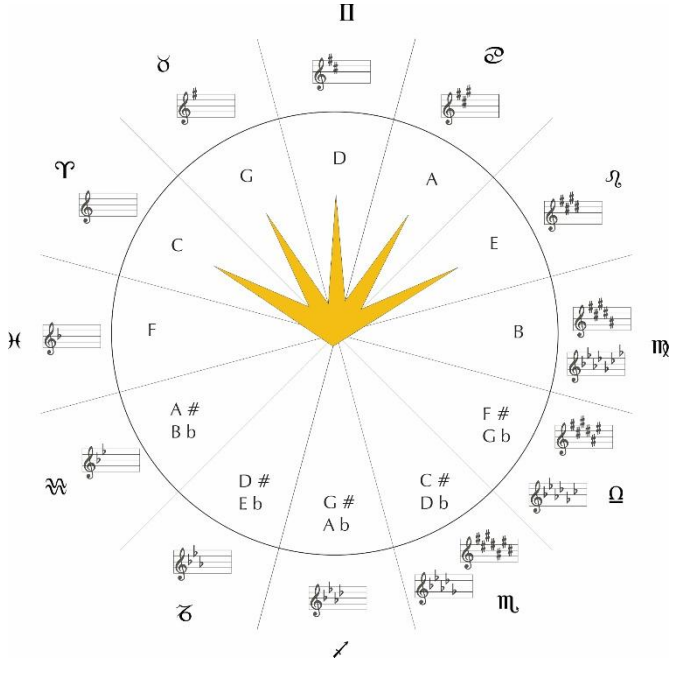
- Yellowish Green Summer: C, D#, F, G, Bb (*no E nor A*)



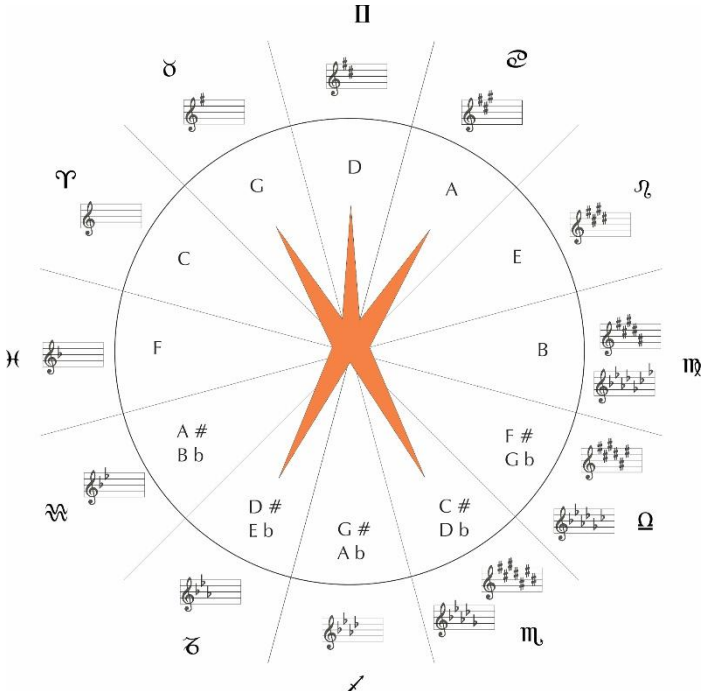
- Sunny-Yellow Summer: C#, D, F, G, Ab (*without E nor B*)



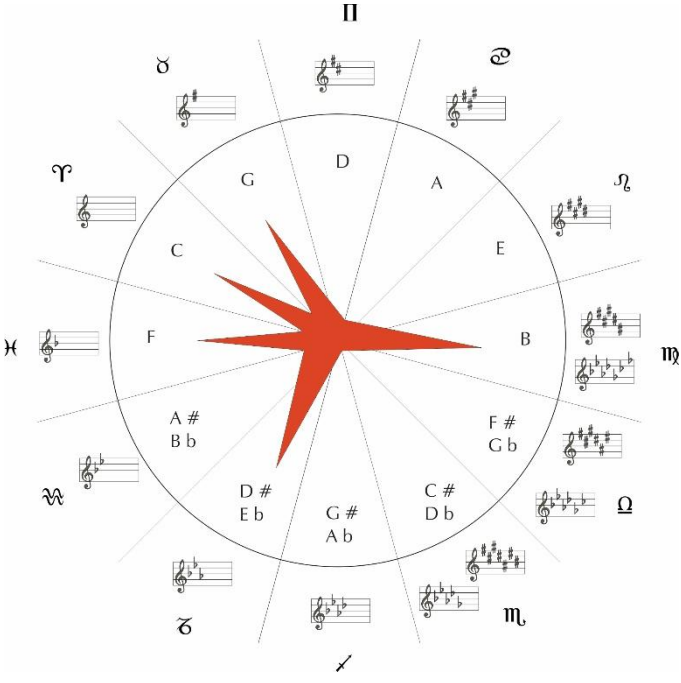
- Yellow-Orange Summer: C, D, E, G, A (*without F or B*)



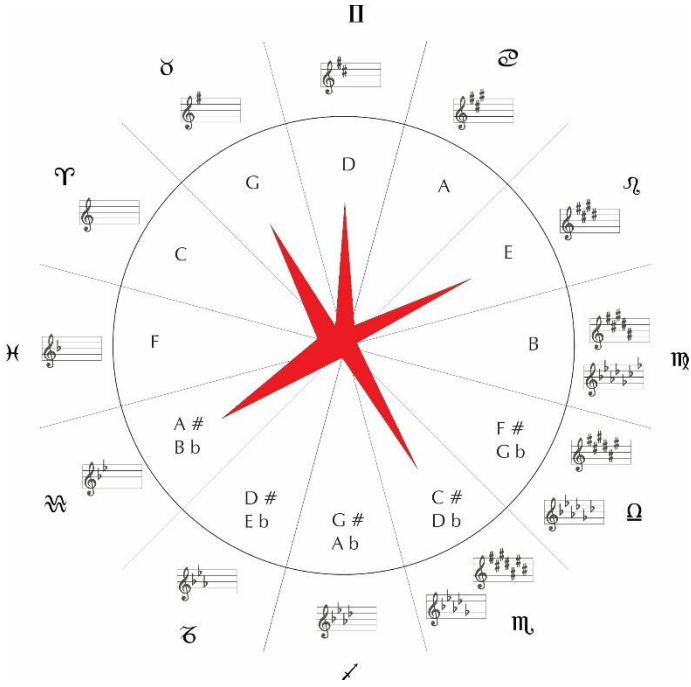
- Fruity-Orange Fall: C#, D, Eb, G, A (*without F or B*)



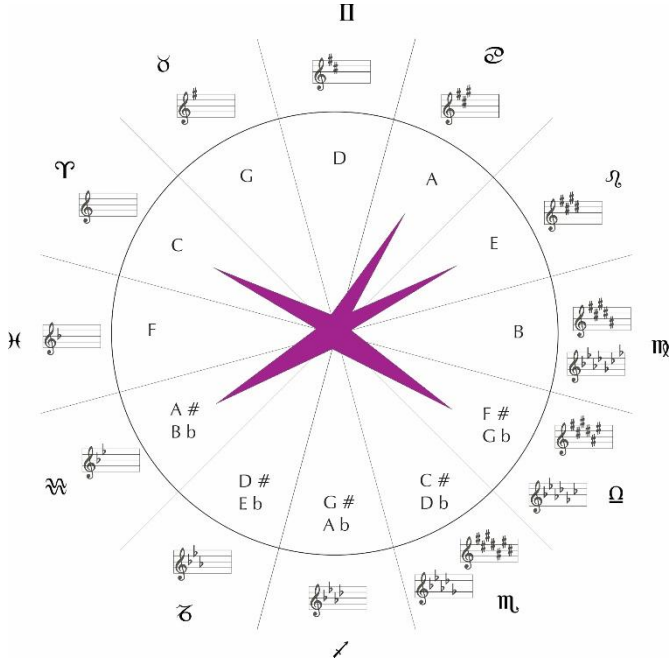
- Reddish Orange Fall: C, D #, F, G, Si (*no E nor A*)



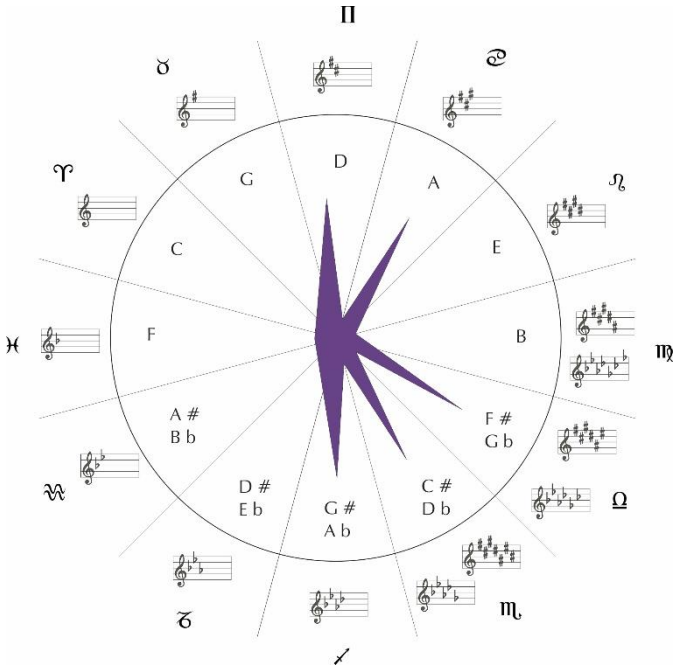
- Fire Red Fall: C#, D, E, G, Bb (*no F or A*)



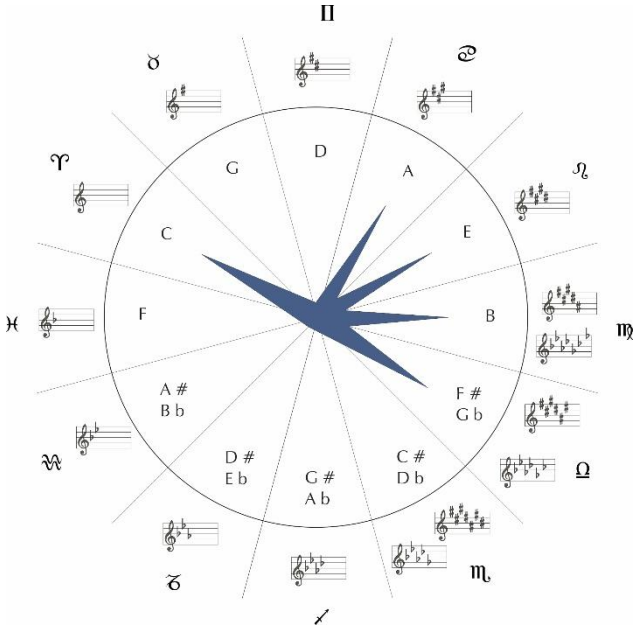
- Heling Violet Winter: C, E, F#, A, Bb (*no D or G*)



- Winter Blue Violet: C#, D, F #, G #, A (*without E or B*)



- Indigo Blue Winter: C, E, F#, A, Si (*no D or G*)



9 – Musical resources in harp therapy

Breathe, relax, be silent, listening to the sounds of harmony. Irradiating the best energy of yourself. Allowing yourself to get into dynamic state of energy vibration of light, peace, love, brotherhood, ethics, goodness. Give yourself a self-command to allow yourself to be helped by your own guides to perform your evolutionary task.

Knowledge of the modes is an important tool for deepening the perceptive observation to understand the client and help him to find his essential quality. The harp therapy practitioner seeks to develop inclusive attention: frequency + intention = healing, keeping in mind the intention and focus for peace and harmony in the moment that you put the patient, without judgement, in a sound cradle of love. From the quality that the patient manifests the harp therapy practitioner try to play that character sonically, seeking to resonate with him. Seeks to follow the changes that are happening from the interaction between patient, therapist and music, and draws a sound way to take the patient to a state of mood and more homeostatic feelings than he or she had at first.

We listen to music everywhere we go, from supermarkets to airplanes, but we rarely listen to live music. Usually heard songs are static, they are already recorded in a finished way. Live music is dynamic, it can be addressed to someone specifically, it can be individualized according to the need.

Before the twentieth century, music was considered a valid and applicable science, essential for the development of geometry and language. But today, music, in general, makes part only as an introductory education for children. It is often considered optional or

even superfluous. With this, people are losing possibilities development of integration between body, feelings, thoughts and spirit.

Nowadays, there are scientific researches proving that music can relieve symptoms of suffering. Therapeutic music performed live at the bedside can have a healing effect immediately and it is not intrusive. The goal is not the performance, but assistance. Scientific research describe the following human response to music: distraction, imagination, emotion, catharsis and relaxation.

Music is the ethereal connection between worlds and dimensions. It can be used associated to medicine, to beneficial forces of the universal source of well-being, kindness, integrity, transcendence. Music does not cure, but can be inserted in a dynamic process that can lead to healing. Not all the songs have therapeutic potential. No music is in itself good or bad, and each person is affected by the music in different ways. Not always a cheerful music will help a sad person and not always a soothing music will help someone in pain. Each person has his or her sound universe and the therapist needs to meet his or her reality. Music has therapeutic quality depending on the composition, the execution, the listener, the stance taken by the therapist and the listener, and many other factors.

To vibrate sympathetically is a property of resonance and, as we have said before, this is one of the most important therapeutic tools for anyone working with music. Behind his music, the therapist must have patience, modesty, humanity, compassion and love.

Rhythm can change the effects of melodic intervals. To enhance the character of the three great musical forces described by the Celts, we can use binary rhythms to calm music, binary or ternary rhythms to emotive music and ternary rhythms to happy songs. Rhythmic songs are stimulating and hypnotic. The arrhythmic songs are sedating, transcendent, distracting and promote relief. Then, in some cases, it is desirable to do free improvisation for the patient.

Familiar music can be strong therapeutic agents; on the other hand, unfamiliar music can create a sense of distance in the listener's mind and create images. At first, the unknown music promotes alertness by stimulating the flight or fight response. Then, it enters other pathways

and stimulates various brain areas, providing a dictionary work in the brain, to the extent that it will recognize and code the sounds heard. The unfamiliar sounds activate, recover and reorganize information. Therapeutically it is good to combine known songs known with not known ones.

Improvisation is the invention of music at the time. It is the courage to move from one note to the next. There are no mistakes; there are changes and route adjustments.

You can explore different ways to improvise trying to play synesthetic sensations on the harp. Synesthesia is the relationship of different sensory plans. The term is used to describe a figure of speech and a series of phenomena caused by a neurological condition. Just as the metaphor or comparison by simile, there are related parties of different universes, as in the following examples: Temperature: Hot, cool, warm. Palate: Sweet, sour, salty, spicy, bitter. Odor: Fragrant, fetid. Vision: Clear, dark, white, black, color (red, orange, yellow, green, light blue, indigo, violet). Temperament: Melancholic, joyful, choleric, phlegmatic. Texture: Smooth, rugged, soft, hard. Shape: Pointed, rounded, square, rounded. Atmosphere: Wind, rain, Sun. Elements: Wood, metal, water, earth, fire. Dynamics: Agitated, Quiet. Intensity: Strong, weak. Volume: High, low. Frequency: Treble, bass. Duration: Long, short. Progress: Fast, slow. Timbre: Metal, strings, percussion, wood, voice. Seasons: Spring, summer, fall, winter. Planets and Modes: Moon - Aeolian, Sun - Doric, Mars - Phrygian, Venus - Ionian, Mercury - Locrian, Jupiter - Lydian, Saturn - Mixolydian. Landscapes: Plains, deserts, glaciers, mountains, seas, lakes, forests, gardens, cities, deep sea, galaxies. Constellations: Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpio, Sagittarius, Capricorn, Aquarius, Pisces. Sensations: Anguish, pain, melancholy, courage, determination, joy, euphoria. Motivations: Peace, tranquility, calm, strength, courage, thankfulness, trust, hope, inspiration, love, beauty, care, freshness.

In English there is a term called entrainment used in music therapy. It can mean the synchrony of certain frequencies' waves. The therapist plays a song that matches the patient's temperament and then modulates to take him to a state of more balanced mood. The typical modulation technique for vibrating sync is finding the patient's

condition and playing something like it, then the therapist attempts to stabilize this condition, in a musical immersion of that character, to neutralize it. Finally, the therapist modulates, leading the music to a more exciting or pacifying expression, depending on the case. Therefore, the steps are: find the point of the patient, enter his or her space, and take the patient to a different place more homeostatic.

Modulations in modes to accompany stories

For every story, you need to create a specific mood. We can use the modes relating them to the sense of dark-light, constricted-expansive, in the sequence already presented in the chapter on Modes:

- Locrian: the transition after the twilight;
- Phrygian: as the dark night, with a little anguish;
- Aeolian: as dawn, melancholic;
- Doric: balanced and vital;
- Mixolydian: cloudy and peaceful;
- Ionian: light and happy;
- Lydian: very clear, dazzling.

Harp to create sound environments in other scales

The harp has wonderful features to create different atmospheres. We can also use exotic scales, exploring the possible atmospheres.

- Natural Minor: C, D, Eb, F, G, Ab, Bb
- Harmonic Minor: C, D, Eb, F, G, Ab, B
- Minor melodic: C, D, Eb, F, G, A, B
- Bachiana: C, D, Eb, F, G, A, B (ascending) / C, Bb, Ab, G, F, Eb, D, C (descending)
- Gipsy minor: C, D, Eb, F #, G, Ab, Bb
- Gipsy major: C, D, Eb, F #, G, A, B

- Arabic minor: C, C #, E, F, G, Ab, B
- Arabic major: C, D, Eb, F #, G, A, Bb
- Middle East: C#, D, E, F, G #, A, B
- Brazilian northeastern: C, D, E, F #, G, A, Bb
- Whole tones scale: C, D, E, F#, G#, Bb
- Twelve semitones: C, C#, D, D#, E, F, F#, G, G#, A, Bb, Si

Harp on relaxation

I love using the sequence of Pachelbel's Canon chords in D major, for breathing and relaxation exercises: D, A, B, F#, G, D, G, A. I do descendant arpeggios on expiration, I arpeggiate chords in pauses and do ascending arpeggios in inspiration.

I also like to use the sequence of chords in A minor harmonic from the song *Nada te turbe,* by *Taizé*, in A minor: Am, Dm, G, C, F, Dm, E, A. I created a substitute lyric to make it more universal: *May nothing disturbs you, may nothing bothers you, have gratitude (or hope) and love*.

Music and Chinese medicine

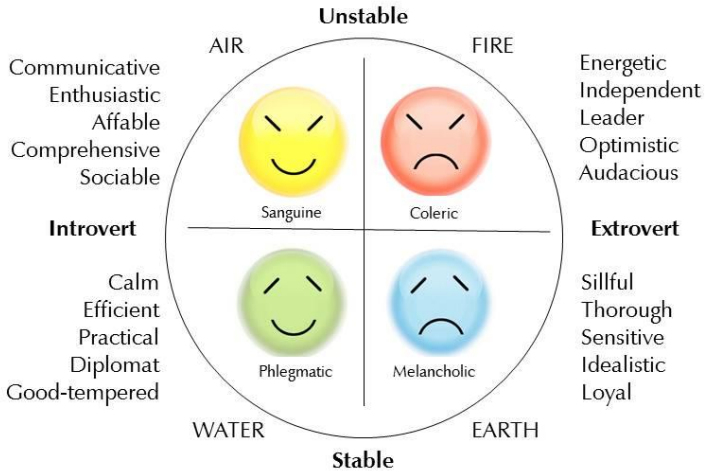
In the *Creative Harpings* series, by Christina Tourin, there is a CD specially dedicated to Chinese medicine. It also proposes relations to each element and its note:

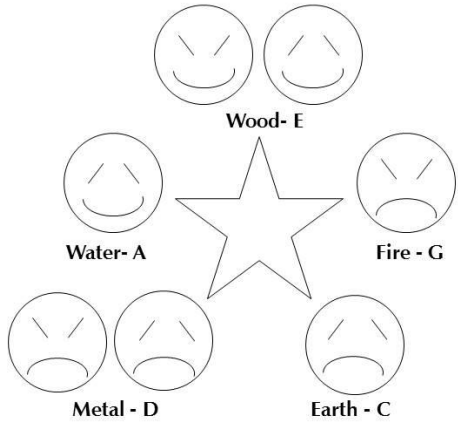
- Wood - E: Childhood, spring, movement, expansion, work, creativity, flexibility, leadership, solidarity, communion, ethics, character, nobility.
- Fire - G: Energy, excitement, joy, enthusiasm, activity, sparks, heat, inflammation, generosity, love, vitality, youth, communication.
- Earth - C: Reflection, nutrition, support, fertile, abundant, stable, cyclic, round, centered, comfortable, friendly, firm, strong, maturity.

- Metal - D: Cutting, sharp, stiffness, firmness, minutia, discretion, compassion, persistence, realistic, stubbornness, observation, rational, elderly.
- Water - A: Adaptability, flexibility, sociability, suspicion, emotionality, respect, sincerity, sinuosity, subtlety, intuition, fluidity, gestation.

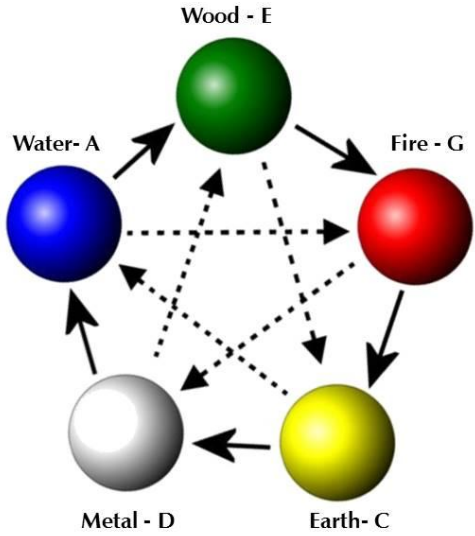
Element	**Organ**	**Víscera**	**Emotion**	**Sound**	**Note**	**Season**	**Phase**	**Compo-ser**
Fire	Heart	Small intestine	Joy	Laugh-ter	G	Summer	Youth	Beethoven
Earth	Spleen-pancreas	Stomach	Worrying	Singing	C	End of summer	Maturity	Bach
Metal	Lung	Large intestine	Sadness	Cry	D	Fall	Old age	Chopin
Water	Kidneys	Bladder	Fear	Moan	A	Winter	Pregnancy	Schuman Bhrams
Wood	Liver	Gallbla-dder	Wrath	Scream	E	Spring	Infancy	Mozart Vivaldi

I made some analogies between 5 Chinese elements and the four Aristotelian elements used in anthroposophy:





Aristotelian elements and their temperaments Water (phlegmatic), Earth (melancholy) and Fire (wrathful) correspond, in my study, the namesakes Chinese elements. The Chinese element wood would be a mixture of Aristotelian elements Air (sanguine temperament) and water (phlegmatic). The Chinese element Metal correspond to the Aristotelian elements Fire (wrathful) and Earth (melancholy). These analogies serve only as a basic reference for recognizing the typical expression being worked on the patient.



The five Chinese elements are usually represented internally joined by a star of 5 points and externally by a pentagon. The 5 pointed star is the dominant cycle of the elements: water extinguishes fire, fire melts metal, metal cuts wood, wood penetrates the earth, the earth controls water. The pentagon is the generating cycle of the elements: water nourishes wood, wood feeds fire, fire turns to ash and fertilizes the earth, from earth metals come, vase-shaped metal houses water.

In music therapy, the therapeutic process begins with the sound identity of the client, the ISO[29], as studied in Music therapy. We started playing the sound that tunes with the patient and then we take him or her through a sound path that leads to a more balanced and harmonious goal for one's time. Therefore, if a patient is depressed, we do not immediately play a happy song for him. This could be an assault. In general, we improvise something that is related to his mood and then we modulate and try to change that state to something that will be better, healthier and more homeostatic for him. Therefore, within the elements of Chinese medicine, we work with the generation cycle and very rarely we use the destruction of the cycle.

The practical way to use these relationships between sounds and elements of Chinese medicine is to first identify the client's predominant element and see if it is defective or if it is in excess. Realize which path to take him to balance and modulate to reach the therapeutic target.

If the element itself of the patient is weak, we start improvising with the note and the way of the element itself, then we modulate to the generating element, in order to stimulate.

If the element itself is in excess, we also start playing in the mode of the client's element and modulate to the element to be generated to balance the energy. Then we can modulate again, following the generation cycle, until we reach the target element that has been determined as therapeutically appropriate to the patient.

[29] ISO Principle: Continuous music played live to elevate or reduce such mood or level of stimulation in the listener, beginning at a level that mirrors that of the patient, and concluding at a desired level of stimulation, as determined by the therapist.

To use all this knowledge in harp therapy, we prepare the harp in the Chinese pentatonic scale. We tune up the B string to C and tune down the F string to E. So we have: C, C, D, E, E, F, G, A and B = 5 notes (the 7 scale strings are left with two repetitions). We use glissandos in different ways. To Wood, we emphasize the E note and we make upward movements and sometimes use percussive sounds of the sound box. For Fire, we use tremolos, play short and fast glissandos, we can even use nails, emphasizing the G note. To the Earth element, we play static and low chords emphasizing the C note. Improvisation for the Metal may include passing open hands on the bass strings, and use dissonant sounds such as seconds and sevenths, with emphasis on the D note. For the Water element, we emphasize the note A and play descendant arpeggios and free fluid glissandos.

For example, we observe a person entering our office vigorously, in heavy steps. His speech is firm and excited. We realize that he has a Fire temperament. As the client is very agitated and dispersed, it seems that the Fire is in excess. So we start improvising with pentatonic glissandos in the style described before for the Fire element and modulate to the most stable and solid style of the Earth element. Now, if another patient also got heavy, firm, but a little unmotivated footsteps, he (or she) tells us that he (or she) is a very enthusiastic person, but now, at a time, of low motivation. We can identify a Fire element deficiency. In this case, we begin to improvise in the style of the Fire element and modulate to Wood.

10 – Multidimensional energetic tuning exercises

By playing energy as who plays the harp, more powerful harmonies than sound can be produced. Working with harp therapy can have multiple levels to reach a depth where the main focus becomes the positive energy, beneficial, therapeutic, which is shaped during interaction with music, the performer and the listener.

These exercises were based on many practical and studies that did. Among them there are the work of self-massage taught by Judith Hitt, IHTP Resonance instructor along with Christina Tourin, on Barbara Brennan's studies, on the information on consonants and vowels taught in the course of Chant therapy, in Anthroposophy, in energy work of Projectiology and Conscientiology, and in Reconnection and. I do these exercises every day, whenever possible. With practice, they take on average 15 minutes and promote a full activation of physical, etheric, emotional, mental and spiritual energy.

1. Support and grounding:
    1.1. Stand barefoot. Support your feet successively on the tips, on the heels, on the outer and inner edges. Support your feet flat on the floor looking for a balance point. Stick your feet as if they were roots, feel the energy root to the center of the earth.
2. Connection:
    2.1. Stretch your arms to the top of your head and touch a palm on the other. Feel the energy from the point that lies between both palms. This is the point related to the purpose of life.
    2.2. Perceive a light beam from the infinity passing through that point, entering the body through the top of your head, running through it, leaving the perineum, continuing its light path

between the legs and penetrating the interior of the earth at a point between your feet. Let this light pierce you while listening to the sound emission of the high C note sung by the practitioner.

3. Chakras:

3.1. Form a circle with both hands and bring them to the crown chakra at the top of the head. Imagine the violet color and hear the B note.

3.2. Bring your hands in a circle for the front, the point between the eyebrows, the frontal chakra. Imagine the violet blue color and hear the note A#.

3.3. Form a circle with your hands on the back of the head, imagining the dark blue color while listening to note A.

3.4. Place the circle shape in the neck, in the laryngeal chakra, imagine the light blue color and hear the G# note.

3.5. Make the circle with your hands on the nuchal chakra, imagining the blue-green color and listening to the G note.

3.6. Bring your hands to the central area of your chest, the heart chakra, imagining the green color, move your hands imagining the connection of the palm chakras with the heart and hear the note F#.

3.7. Touch your back with both hands in a circle, imagine a yellowish green color and hear the note F.

3.8. Bring your hands to the solar plexus chakra, in the stomach region, imagining the yellow color and listening to the E note.

3.9. Bring your hands to the lower back, imagine the orange yellow color and hear the Eb note.

3.10. Make the circle with your hands just below the navel, in the sexual chakra, imagine the orange color and hear the D note.

3.11. Form the circle on your back in the sacral region imagining the reddish orange color and listening to the Db note.

3.12. Bring your hands in a circle to the perineum, imagine the red color and hear the C note. Imagine the root chakra connection with the soles chakras.

3.13. Do the reverse path from toe to head, from the low C note to the high C note running again through all the chakras until the top.

4. Joints:

4.1. Turning the head clockwise 3 times and counterclockwise 3 times. Move your head to the right 3 times and 3 times to the left. Then move it 3 times down and 3 times up.

4.2. Move your shoulders 3 times forward, rotating, and 3 times back.

4.3. Do 3 clockwise and 3 counterclockwise rotations with your arms. Move them into the air as if to scoop stars.

4.4. Do 3 clockwise and 3 counterclockwise rounds with your elbows.

4.5. Do 3 clockwise and 3 counterclockwise rounds with your wrists.

4.6. Do 3 clockwise and 3 counterclockwise rounds with the thumbs, indicators, middle, ring and minimal fingers. Interlace the fingers of both hands.

4.7. Move the waist in 3 clockwise and 3 counterclockwise turns. Doubling the waist to the right 3 times and then to left for 3 times.

4.8. Move the hip in 3 clockwise and 3 counterclockwise turns. Turn up the buttocks 3 times, take the hips forward 3 times.

4.9. Do 3 clockwise and 3 counterclockwise times with your knees.

4.10. Standing on one foot and doing 3 clockwise and 3 counterclockwise rounds with the ankle. Do the ballerina feet and the clown feet movement 3 times. Stand on the other foot and repeat the movements with the other ankle.

5. Stretchings:

5.1. Stretch the right arm with your elbow chest high, holding it with your left hand. Do the same movement with the other arm.

5.2. Bend your right elbow on the top of your head, pulling it with your left hand. Repeat it with the other elbow.

5.3. Stretch the right fist ahead with your hand up, then down. Repeat with the left fist.

5.4. Interlace your fingers and rub them 3 times.

6. Eyes:

6.1. Spin your eyes clockwise 3 times and then counterclockwise 3 times also. Look up and down 3 times and right and left 3 times.

6.2. Rub your palms together and put them cupping your eyes. Blink them 3 times inside that cup.

7. Self-massage:

7.1. With your fingers, rub the entire scalp tightening the sore spots. Gently tap the top spot.

7.2. Pass the right hand on the forehead and then the left hand 3 times.

7.3. Massaging the forehead, tighten sore spots on your eyebrows. Tighten the points along the nose and sinuses with the index fingers, to clear them. Massage the ATM joint and all the gums corresponding face region. Massagie your ears, pressing with your fingers all turns. Do 3 turns 3 times and counterclockwise with tongue in cheeks. Filling the cheeks with air, grimacing, putting your tongue out. Use your entire face to make round movements.

7.4. Gently massage your neck and the area of the larynx and thyroid.

7.5. Massage your neck.

7.6. Massaging the back, give it some slaps. Make movements taking the weight off the shoulders 3 times.

7.7. Lovingly massage the chest area. Tapping with your fingertips on the collarbone and then in the thymus region. Tighten the sore spots. Make 3 circles around your breasts. With your palms, make circular movements releasing hurts, resentments. Sigh: ah!

7.8. Tighten the armpits with crossed arms in front, with the right hand on the left armpit and the left hand in the right armpit.

7.9. Place the right hand on the left shoulder and the left hand on the right shoulder and give yourself a hug. Experience the feeling of love, forgiveness and gratitude for yourself.

7.10. Massage the right arm down from above and behind until your hand and rise up inside from the palm for 3 times. Repeat it with the left arm.

7.11. Give 3 pats on the back.

7.12. Massaging the ribs, back to front.

7.13. Massage the entire abdomen and tighten the region of the liver (right), the region of the spleen-pancreas (left), pat on the stomach area, massage the navel and tighten below it in the uterus area and lower on the bladder. Make turns massaging the bowel region.

7.14. Give 3 closed hand taps on the back, in the kidney area.

7.15. Tighten your buttocks and massage your legs down from above and behind to your feet and moving up ahead by 3 times.

8. Consonants:

8.1. Chanting "n" with the tone of the C note and moving your feet.

8.2. Chanting "m" with the Db note and rubbing the calves.

8.3. Chanting "l" with the D note and massaging the knees.

8.4. Chanting "g" and "k" with the Eb note carressing the thighs.

8.5. Chanting "s" and "z" with the E note exercising the muscles of the perineum.

8.6. Chanting "ch" and "j" and moving the hips with the F note.

8.7. Chanting "b" and "p", withering and bulging your abdomen with the F# note.

8.8. Chanting "f" giving yourself a hug with the G note.

8.9. Chanting "d" and "t" patting the center of the chest singing the note G#.

8.10. Chanting "h" opening your arms to the high with the A note.

8.11. Chanting "r" making a turning motion with your hands in front of the throat with the note A#.

8.12. Chanting "v" with a hand movement from the forehead to the top with the note B.

8.13. Chanting "ng" with your hands up high and the high C note.

8.14. Make a descending glissando with your voice in "prrrrr", releasing all the air.

9. Vowels[30]:

9.1. Singing A with open arms in the air.

9.2. Singing Â with arms a little more closed up.

9.3. Singing O making a large circle with arms ahead.

9.4. Singing Ô decreasing the diameter of the circle.

9.5. Singing U with arms outstretched to the top and then bringing them down.

9.6. Singing A with open arms downwards.

9.7. Singing E with arms crossed in front and palms up.

9.8. Singing Ê with arms crossed in front with palms down.

9.9. Singing I with one arm outstretched high and the other down.

10. Breathing:

10.1. Expire bending the knees and lowering 3 times, deeply from time to time, removing all air. Take a deep breath. Then make an admiring gesture with your face.

10.2. Draw a hands lemniscate (infinity = number 8 symbol) with your hands in front of the body vertically, exhaling down and inhaling

[30] Translator's note: The mother tongue of the author is Portuguese; therefore, the vowels and consonants herein apply to sounds of that language.

up 3 times. Repeat the movements exhaling over and inspiring below. Joining body, soul, spirit and action, feeling, thinking.

10.3. Draw a lemniscate with your hands in front of your body at chest height, horizontally, exhaling on the right side and inspiring on the left 3 times. Repeat the movements exhaling left and inspiring right. Joining yin, neutral, yang and instinct, intuition, reason.

10.4. Draw a lemniscate crosswise moving the lumbar spine forward and then taking the tailbone back. Exhale back, inspire ahead 3 times, then exhale in front, and inspire behind. Unite past, present, future and memory, now, planning.

11. Tuning with the infinity:

11.1. Sing: "Balance, peace and harmony. Nothing in excess, nothing missing. I'm in the universe, the universe is in me. Connection. Integration. Union. Universe infinite in my infinite being. Tuned, resound balance, peace and harmony".

11.2. Perceber a energia, sentir a vibração de todas as células. Exteriorizar a energia para toda a sala. Absorver a energia.

12. Energetic dynamics:

12.1. Sit down and imagine an energy field in front of your body from the feet to the head as if it were an energy harp.

12.2. Place a hand 2 cm away from the palm of the other and realize the energy field that forms between the palms.

12.3. Work that energy, stretching it as a caramel, horizontally, vertically, in the transverse direction. Try various movements.

12.4. Move your fingers as if you were playing the energy harp ahead, the lower and higher imaginary strings. Place your thumbs on top and make the glissando movement up and down opening your arms, giving the mobilized energy. Point your index fingers and close the other fingers in a low upward movement, absorbing and receiving energy.

12.5. Connect with all available help from higher entities, angels, guides, mentors, helpers, hierarchies, invisible helpers, instructors.

12.6. Give energy where it is needed.

12.7. Radiate love, forgiveness, gratitude and compassion for your mother, father, grandmothers, grandfathers, aunts and uncles, all teachers, trainers, therapists, friends, colleagues, sisters and brothers, companions, relatives of partners, employees, acquaintances, children, nephews, students, patients, service providers, animals, plants, minerals.

12.8. Externalize beneficent energies to your room, house, city, country, planet, universe.

12.9. Feel the vibration of the energy. Let a slight smile appear in the quiet and peaceful face.

12.10. Experience peace, harmony, balance.

12.11. Let the word AWARENESS present in your mind. Ask yourself "what am I?" Stay in silence, experiencing the movement of energy in total surrender, openness, availability, actively participating in the creation of a state of being increasingly lucid.

11 – Synthesis

Each person has a genuine root note and it is as a harp that resonates when something touches his or her feeling.

This last decade of deep studies on the relationship between consciousness and energy in various gradations of density and on the harp therapy, led me to draw up this book. The word tone can mean both colors and sounds, and can also mean shades and nuances. So I tried to summarize here the various possibilities for therapeutic use of the harp in clinical practice.

In a retrospective of my own life, I realize that this book is part of one of the tasks I planned for myself for this lifetime, at a deeper level of my consciousness. Since I was 7 years old when I started to play the piano, my musical moments for me are important occasions to establish closer connections with me and the universe. At age 12, I found the circle of fifths intuitively, without having seen anything about it before, and that was a sign to me that I would have to develop more studies related to music, geometry and colors. Even having decided to study architecture "*to help to build a new world*", as I said at 14, at 16 I decided to work for a short period, giving flute lessons for my neighbors. With an old portable typing machine, I elaborated detailed booklets with basic information about music and illustrations, which were copied in the mimeograph I borrowed from my school and then I capriciously bounded them manually. Later, I got interested on singing.

The harp has always fascinated me, but I considered it an impossible dream. Having already succeeded in a way as an architect, and have had a community experience where I developed more discipline, finally I had the opportunity to learn to play the harp. So, what once seemed so far away, came to me in a very consistent way with my whole life process, my search path for more assistance activities in the

world and the understanding of art as a mean of connection between consciousness levels. Seeing a harp up close for the first time, gave me a glimpse of a subjective impression, as if it were a retro-cognition. I found myself in a previous life, which took place over a thousand years in a deathbed, next to a harp. I realized that I had created a desire of in some future moment being able to touch play it.

When I began my studies on the instrument, my life has changed radically, it's one of the reasons I consider it an important resource of transformations and self-knowledge. From the moment I decided to learn how to use the harp in a therapeutic way, I started a path of liberation of structures, forms, prejudices, thoughts and of mystical, religious and puerile feelings. I was becoming increasingly independent, autonomous and committed to the issues of the present time. Getting even more interested to help and respect all consciences, without distinction, whether plant, animal or human of all cultures, beliefs, ethnicity, gender, bio-psycho-social conditions, ideologies, with the greatest possible universality and fraternity. I work every day my energies to be in connection with evolved consciousnesses that support me. My current spirituality is very informal. Along with my husband, who is a holistic doctor, we study new therapies that include healthy eating, organic and vegetarian, and engage in environmental issues for the protection of forests, animals, Indigenous, and others.

During the learning process of harp therapy, I did an auto harp therapy and turned inside out, discovering endless questions, deepening my self-investigation to know me better. I recorded my autobiography in the e-book called *Harmony Paths*. Offering an apprenticeship is one of the most important ways to learn. Preparing the course lessons harp therapy and with this book, I have the opportunity to prepare everything I learned and absorb knowledge. My gratitude for the entire journey is immense.

I hope I have contributed to readers interested in the issue. The harmony of energy, peace and universality present in my intention to share my research and reflections will help in the sowing of a new human consciousness, more unselfish, generous, peaceful, serene,

lucid, fraternal and committed to the positive transformation of the planet and universe. Gratitude and Love.

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Orelha 1 do livro:

Cláudia Borges de Miranda *lives in Belo Horizonte, Brazil. She graduated in architecture at UFMG and did various projects and work with typesetting. Studied music since childhood, but from 2002 began a more focused dedication to the sound world, to start the harp studies. She attended several music courses, including training in harp therapy by the IHTP (International Harp Therpay Program), coordinated by Christina Tourin and a degree in music therapy at UFMG in 2012. She attended the course of Thanatology by SOTAMIG and several courses for the expansion of awareness with different approachess.*

She writes and researches on issues related to awareness, energy, harp therapy in her Harmonian-Harp therapy site and the Harp therapy Brazil blog. Music therapy attends clients theoffice, in private homes and nursing homes. She offers harp therapy in hospitals, animal shelters, children's shelters and home for the elderly by the Harps Angels project in the HarPEACE project, which is specific for relaxation, peace and harmony.

Orelha 2 do livro:

In the 1980s some harpists in the US founded several music using movements on the use of the music played on the harp therapeutically, following the way of music therapy, but more focused on institutionalized patients in hospitals, nursing homes and others. Christina Tourin founded the International Harp Therapy Program (IHTP) and has trained over 2000 harp therapy practitioners worldwide. She came to Brazil in 2011, 2013 and will come again in 2017, by invitations from Claudia Miranda, which is making a major effort to deploy and show this activity in Brazil. Claudia opened the course of Harp therapy - Brazil, affiliated to her IHTP.

"*In my professional practice I have to make several adjustments to our reality. So I decided to write this book, to share the singularities of pioneering therapeutic practice in Brazil. Our reality gives us the opportunity of exercising great skill, adaptability and creativity. I realize that we are building a new way of working and our role is not just therapists. We must be educators, communicators, informants so that people can know this form of therapy and accept it as a possibility to be used.*"

Contra-capa:

What is harp therapy? What are the possibilities of the therapeutic use of the harp, this millennial musical instrument?

In this book, the author, a pioneer in the harp therapy activity in Brazil, shares with the readers the basis of this technique and invites them to a tour of the resonances of an instrument full of, not only soundwise, but also plastic charm and beauty.

The harp therapy is an activity that involves several areas: therapeutic treatment (mainly aiming relaxation, stress relief, self-knowledge); harmonious artistic enjoyment; education and hearing awareness; social engagement committed to world reality (many activities are done targeting specific minority groups that go through traumatic situations, including people and animals in institutionalized care facilities) and also contact higher levels of consciousness.

There are many possible shades and hues in this work, which, although innovative, has its roots in the early days of mankind. May this book contribute to greater serenity and lucidity with the every person's note that vibrates in resonance with this type of approach.