Athens Journal of Philology
Volume 13, Issue 2, June 2026 – Pages 89-110

Arab Music Traditions and Music Therapy: Ibn Sīnā's Contribution to Music Therapy

*By Maria Rosaria D'Acierno Canonici Cammino**

*This paper is based on a diachronic and synchronic analysis about the use of music as a therapeutic means. The diachronic analysis has been helped by the reading of the many scientific texts written by ancient as well as modern writers, while the synchronic analysis has considered personal recent experiments conducted in some Italian schools whose curriculum enhanced music from many different sides. The paper has two aims: 1) to stimulate further research on nowadays music therapy, and 2) to recognize how advanced medicine was during the medieval era in the Middle East, compared to medicine in the Western civilization; a civilization which hardly recognizes the Arab contribution to science. Rather, for the Arabs, the Dark Ages was a time rich in all branches of culture and science: philosophy, technology, metallurgy, textiles, agriculture, mathematics, astronomy, chemistry, architecture, and medical techniques, such as distillation, crystallization, cataract, and, furthermore, the use of alcohol as an antiseptic. It was a determining era for the European Renaissance, due to the Arabs' scientific as well as philosophical studies, later transferred to Europe, in particular, to the monasteries in South Italy, through Spain and Sicily. In order to focus on the relevant role of Islamic music therapy, during the Middle Ages, a comparison with contemporary music therapy in the West, will serve to stimulate this field. Then, since this analysis focuses on music therapy, inevitably, music, as an art and as a science, will occupy a relevant role by tracing how music developed in the Middle East, under the influx of Greek and Indian traditions. While examining medicine and music therapy, the attention will focus on the philosophical field (*Al-Kindī, Al-Fārābī, the Ikhwān al-Ṣafā, Ibn Sīnā, al-Ghazālī, Ibn al-Khaldūn*), since the field of philosophy used to include many different sciences: alchemy, astrology, mathematics, physics, as well as medicine and music, and, moreover, how music therapy was applied in the department of Mental health. This essay will be more narrative then critical. The only critical point, especially at this particular historical moment, is to emphasize that Western civilization should value the teachings of the Islamic world more highly by incorporating the contributions of their philosophers into school curricula.*

Arab Music and the Western World

Since this research wants to highlight how advanced was the culture of the Arabs compared to the one in the Western society during the Middle Age, quoting Zarlino, Foster and Farmer will help the question. This is not a debate, rather it will be a stimulus to break down cultural barriers, and accept widely other cultural ideologies.

Gioseffo Zarlino (1517-1590), the Italian musical theorist, acknowledged the influence of the Arab philosopher Ibn Sīnā, on his own theoretical works, and more generally on the Arabian Renaissance. Zarlino frequently quoted a specific sentence from Ibn Sīnā in order to enhance the relationship between music and science:

*Professor, Uniparthenope Napoli, Italy.

https://doi.org/10.30958/ajp.13-2-2 doi=10.30958/ajp.13-2-2

"Music derives its principles from the science of nature (physics) and the science of numbers (mathematics)." (Zarlino 1558).

> "As early as the second millennium B. C. we have evidence of a South Arabian kingdom, where we come upon traces of 'a high state of civilization' whose culture had much in common with that of Babilonia-Assyria. Indeed, the Greeks were culturally indebted to the Arabs, and Hommel and others hold that Greece probably borrowed from South Arabia, not only Apollo, Leto, Dionysos and Hermes, but also its alphabet." Farmer (1925).

In contemporary scholarship, Chris Forster recognizes the importance of Arab music and tuning theory. Because of the strict relationship between language and music, he, like Farmer, criticizes those musicians who do not know Arabic, since they cannot read the original works of Arab authors (Foster 2010). According to him, the lack of linguistic knowledge limits any aspect of cultural growth. He says that "of the treatises on music written by Al-Fārābī (950), Ibn Sīnā (980-1037), Safi Al-Din (d. 1294), Al-Jurani (d. 1413), Al-Lādhiqī (1494), and Al-Shirwani (1626), not a single work has ever been translated into English." Furthermore, "due to intractable religious, linguistic, and intellectual prejudices against Islam, Christian-dominated institutions throughout Europe – such as Catholic and Protestant churches, schools and universities, managed by 1600, to completely eradicate the Arabian influence from the written history of European religious music." (Forster, n.d.11,45). In order to validate his opinion Foster poses two important reasons: 1) linguistic and 2) religious.

1) Linguistic, because the lack of foreign language knowledge by depriving the subjects of cultural and environmental information, made them strongly locked up within their single angle.
2) Religious, because people should learn to accept others' creeds and different socio-anthropological behaviour. With such a short mind, it will be difficult to enjoy life. In brief, considering the problem from a general point of view, to know a language, to be able to pronounce it and listen to the sound of its words should be a useful exercise which focuses on listening to music, too, since language with its pitch, timber, accents, rhythm, and inflection patterns is a kind of music.

When talking about music, the association with language is inevitable, because language, "an ability uncontroversially present in every one of us" as Pinker says "is so tightly woven into human experience that it is scarcely possible to imagine life without it. … Aphasia, the loss of language following brain injury, is devastating, and in severe cases family members may feel that the whole person is lost forever." Pinker considers language an "instinct, an art. It conveys the idea that people know how to talk in more or less the same way spiders know how to spin webs." He agrees with Darwin's view of language (natural selection) and, when he uses Darwin's words ("that perfection of structure and co-adaptation which justly- excites our admiration, … an instinctive tendency to learn this art, to speak, as we see in the babble of our young children", Darwin 1871), he claims "that language should be

considered not "as an insidious shaper of thought" but "as one of nature's engineering marvels … human language is a part of human biology – an instinct – at all." This art is not exclusive to humans but it is "a design seen in other species such as song-learning birds." (Pinker 2005). He rejects the thesis of language learned because of imitation, and follows Chomsky's revolutionary theory that children learn language for their innate capacity. In fact, they generate sentences always new, since they have their own mental grammar, so that grammar develops rapidly with no formal teaching. This happens, Chomsky explains, because there is a *Universal Grammar* for all languages. This *Universal Grammar is* based on linguistic universals, so that it enables human beings to extract syntactic patterns out of their parents' speech. (Chomsky 1975). These observations should push us to recognize we are indebted to the Arabs for the vast cultural patrimony we have inherited; a knowledge not only concerning music, poetry and musical theory, but a knowledge embracing several scientific fields, which have contributed to spread civilization all over the world.[1]

Music for Al-Kindī, Al-Fārābī, The Ikhwān, Al-Ṣafāʾ, Ibn Sīnā, Al-Ghazālī, Ibn Khaldūn

The Arabs' eclectic scientific knowledge, reinforced by their research about the movements of the 'fixed stars' and planets, gave them the chance to postulate various theories about the universe and about human existence and human nature. Under the influx of Greek philosophy, which played a great role also on the Arab theory of music, the Arabs evaluated human thoughts as being embedded in rotating spheres made of ether. Those spheres emitted vibrations, and the subsequent sound waves played a fundamental role in the development of music. Musicians were able to link those universal sound waves to the sound patterns implied in musical compositions which served to elevate both a sense of community and personal emotions. These developments are at the heart of the highly engaging music used by the Sufis in their striving to come into harmony with God. The following passages illustrate how Sufi music seeks to create a connection with the divine through ecstasy.

> "Hearts and inmost thoughts are treasuries of secrets and mines of jewels. … There is no way to listen to music and singing, and there is no entrance to the heart save by the ante-chamber of the ears. So musical tones, measured and pleasing, bring forth what is in it and make evident its beauties and defects. … And listening to music and singing is for the heart a true touchstone, … Whenever the soul of the music and singing reaches the heart, then there stirs in the heart that which in it preponderates. … the effects which music and singing produce upon the heart, consisting of ecstasy, and upon the members of the body, consisting of dancing and crying out and tearing of garments." (Al-Ghazālī 2015).
> "I composed songs; I sang and played the vina; and practising this music I arrived at a

[1]Hazrat, too, stresses on the link between language and music, and emphasizes that music comes before language: "An infant respond to music before it has learnt how to speak; … In the beginning no language such as we know have existed, but only music … sounds. … by the variety of his musical expressions. … This gradually transformed music into a language, but language could never free itself from music." (1921: pos. 13, 34, 60).

> stage where I touched the Music of the Spheres. Then every soul became for me a musical note, and all life became music. … the Sufi mystic teaching concerning sound and music – sound as the basis of creation and music as an essential means towards spiritual development." (Khan 1921).[3]

The Sufi soon adopted music as a great therapeutic resource, and we have evidence of this aspect in the *Epistle 5*. When the Ikwān want to understand the evolution of our life as well as the main aim of the soul, that vanishes once lives the body in order to begin a new life, they make a parallel between the evolution of melodies and rhythm; evolution which vanishes, once images have been produced, after penetrating the soul through hearing. It is the same for speech, that vanishes, once words have been understood or memorized. The souls, too, once maturity has been completed and have been fully achieved their purpose within the body, are "extracted from the bodies just as a pearl from the oyster shell." (Epistle 5: 126).

> "… consider and understand that your body is an oyster shell and your soul a precious pearl that should not be neglected, for it is of great value to its Creator." (Epistle 5:127)

Music, based on perfect mathematical and emotional proportions, is a sort of metaphor used to enhance the perfection of God. In *Epistle 5* the Ikhwān attest that there is a strict relationship between the Greek theory and the Islamic view of music derived from the tones produced by the movements of the celestial spheres:

> "It is said that because of the purity of the substance of his soul and the intelligence of his heart, Pythagoras the sage was able to hear the tones of the movements of the celestial spheres and the heavenly bodies, and through the outstanding quality of his thought was able to derive the basic principles of music and the tones of melodies. He is the first of the sages to have spoken about this science and to have given instruction concerning this secret, and after him came Nicomachus, Ptolemy, Euclid, and other sages" (*Epistle 5*: 121)

When examining music, the Ikwān consider the role of mind, that of hearing, sight, as well as all the psychological implications felt by both the listeners and the players. From the socio-cultural point of view, they say that music is so important that deserves a discussion even from the Islamic jurisprudence perspective, thus, evaluating, if it is forbidden or permitted (*ḥalāl* – حلال *or ḥarām* – حرام).

Music is a product of the sages who "invented the rhythmic principles of its melodies, and the combination of its notes" and "would intone [la||ana] [texts], accompanied by an instrumentalist's notes [ma'a naghamāt al-mūsīqār], in temples and houses of worship." (124).

Music is forbidden when people use it in order to move material passions, which increase the pleasure of this world by negating the joy of the spiritual world. In so doing, people become "prey to doubt and confusion." (125). It is permitted "to soften hard hearts and to awaken heedless soul from neglected sleep and spirits idling in ignorant slumber …." (123).

From these considerations, it is a short step to the use of music in medicine in order to alleviate both physical and psychological pains. As Carmela Baffioni claims, the Ikwān were aware of the long medical science tradition, so that medicine was

introduced in education despite not being part of the *curriculum*.[2]

The lute, with its four strings, each resembling the fire, the air, the water, the earth, has a precise effect on the listeners' soul and body:

> "… the highest string strengthens the humour of yellow bile, … the second the humour of blood, … the third the humour of phlegm, … the fourth the humour of black bile." (128-129).

Of course, the sages, driven by their wisdom, dictated these principles, which the Ikwān used in the hospitals "at times contrary to the nature of the illness and maladies, and why they confined themselves to four strings, no more, no less. The reason why they made the thickness of each string one third greater than the next higher-pitched one is also because they imitated the wisdom of the Creator, exalted be His name, following the mars of His creation in natural phenomena." (130).

In the "world of generation and corruption, or the sub-lunar world" the perfection of God is in everything and in everybody, so that it is visible in the proportions of our body (28 parts of the human body; the twenty-eight letters of the Arabic alphabet; the twenty-eight mansions of the Moon; in the prosodic feet of poetry and song, based on metre and rhyme, and in the most eloquent speech, which reflects the perfect number, that is to say, number twenty eight).

Even calligraphy, they claim, because of the perfect structure of the letters, that must respect the length of the straight and curved lines, reflects the proportion of the whole universe. The Ikwān, soon add that we can find the same proportion typical of the Arab script, in other languages, too.

> "We may state that the foundations of the letters of scripts, for whichever language they have been devised, … is based in every case on the straight line which is the diameter of a circle and the curved line which is its circumference. … in Indian [numerals], ٩٨٧٦٥٤٣٢١ and similarly Syriac [script], and Hebrew …." (140).

Within Islam, there is a long debate between scholars and theologians about listening to, practicing, and making music, depending on the interpretation of the Qu'rān, since the Holy Qu'rān (**القران**) and the Prophet's *ḥadīths* (**حديث ج احاديث**) are the source of both religious and everyday behaviour (*sharia*).

[2]"Gli Ikwān al-Ṣafā dimostrano di essere ben consci della grande antichità della scienza medica (*al-ṭibb*, o 'ilm al-ṭibb), ben oltre la Grecia (*Ep*. 28, III, 29-.8-11). Essa però non è annoverata tra le scienze costituenti il -*curriculum*, ma è considerata come collegata e 'sussidiaria' ad esse (*Ep*. 7, I, 272. 7). Fa comunque parte delle materie dell'educazione (*Ep*. 46, IV, 63.21)."Baffioni C., Medici, medicine, magia, scienza e sapienza nelle *Rasā'il* degli Ikwān al-Safā'in *L'ottimo medico è anche filosofo*, Le Due Torri, 2018: 118.

> "During certain epochs, music was highly valued; during others, it was outlawed and condemned. But no matter how perspectives may have changed throughout history, music – specifically song – was and still is inseparably linked to the life of the Arabs, assuming an indispensable function at many social events" (Touma: xix).[3]

When considering this field, it is worthwhile quoting one of the most authoritative voices of Islamic world — al-Ghazālī (1058-19 December 1111) — (**غزالي**), who has a clear position within the philosophical movement of his age.[4] In his work *Revival of Religious Sciences - Iḥyā' Ulūm al-Dīn* (**إحياء عُلُوم الدين**), he feels the urgency to delineate what music, both listening and singing, should imply in order to be considered forbidden or lawful:

> " … an explanation is needed of what has been said with regard to listening to music and singing and with regard to ecstasy, and also a statement of what advantages are in these things and what disadvantages and what is recommended in them of laws and modes, and what pertains to them of disagreement on the part of the learned as to their being either forbidden or allowed. … So it is not possible for a thing to be unlawful on the ground that it is speech, having a meaning, equipped with agreeable and measured melodies." (Al-Ghazālī 2015).[5]

Al-Ghazālī explicitly declares his thought about how music should be viewed under Islamic principles; so that, before dictating his fundamental 'rules,' he examines different points of view, about permitting or forbidding music. But, he, soon, adds that those opinions do not lead to any reasonable conclusion:

> "Know that the listening comes first, and that it bears as fruit a state in the heart that is called ecstasy; and ecstasy bears as fruit a moving of the extremities of the body, either with motion that is not measured and is called agitation or with a measured motion which is called clapping of the hands and swaying of the members. Let us, then, begin with the rule as to listening … and we will adduce with regard to it those sayings which express clearly the views which have been held on it. Thereafter, we will mention what points to its permissibility, and follow that up with an answer to what has been laid

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[3]Touma H. H., *The Music of the Arabs*, Amadeus Press, Portland, Cambridge, 1996.

[4]Cf. Al-Ghazālī contributed significantly to the development of a systematic view of Sufism and its integration and acceptance in mainstream Islam. He was a scholar of Sunni Islam, belonging to the Shāfi'ī school of Islamic jurisprudence and to the Asharite school of theology. Al Ghazālī wrote an infinite numbers of books, these are only a few of them: Theology: *al-Munqidh min al-ÿalāl* (*Rescuer from Error*); ðujjat alðaqq (Proof of the Truth); *al-Iqti¡ād fīl-i`tiqād* (*Median in Belief*); Sufism: *Mīzān al-'amal* (*Criterion of Action*); *I¡yā''ulūm al-dīn*, "Revival of Religious Sciences" (Ghazālī's most important work); *Bidāyat al-hidāyah* (*Beginning of Guidance*); Philosophy: *Maqāṣid al falāsifa* (*Aims of Philosophers*) [written in the beginning of his life, in favour of philosophy and presenting the basic theories in philosophy, mostly influenced by Avicenna's works]; *Tahāfut al-Falāsifa* (*The Incoherence of the Philosophers*), [in this book he refutes the Greek philosophy aiming at al-Fārābī and Avicenna, and of which Ibn Rušd wrote his famous refutation *Tahāfut al-tahāfut* (*The Incoherence of the Incoherence*)]; Jurisprudence: *Fatawā' al-Ghazālī* (*Verdicts of Ghazālī*); *Al-wasīṭ fī al-madab* (*The medium* [digest] *in the Jurisprudential school*); *Kitāb tahzīb al-Uṣūl* (*Prunning on Legal Theory*); *Al Mustasfā fī'ilm al Uṣūl* (*The Clarified in Legal Theory*).

[5]Al- Ghazālī, *Revival of Religious Sciences Ihya' Ulum al-Din*, Part I and Part II (1901), Part III (1902), "Emotional Religion in Islam as Affected by Music & Singing" (eds. MacDonald, D. B.) (1902). In *Journal of the Royal Asiatic Society of the Great Britain and Ireland*, pp. 705-48.

hold of by those who assert that it is forbidden" (Al-Ghazālī idem: 200).

He states that since listening to music, singing and speaking are natural gifts coming from God, they should be lawful, unless they contain some unlawful considerations:

> "… it is impossible that … these sounds should be forbidden simply because they are pleasant and measured; for there is no one who regards the voice of the nightingale or those of other birds as forbidden. And there is no difference between our throat and another … So we ought to draw an analogy from the sound from the sound of the nightingale to the sounds which issue from all other bodies, especially to the sounds belonging to man, as those which issue from his throat, or from the *qaḍīb* (**قضيب**)[6] or the *ṭabl* (**طبل**) or the *duff* (**دُف**) … But from this there is excepted those idle instruments of music, both stringed instruments and pipes, to forbid which a law was revealed …" (al-Ghazālī: 211).

In fact, even poetry and speech might be considered unlawful if they include an unlawful meaning:

> "If there is in it anything forbidden, saying it, either in prose or verse, is unlawful, and speaking it, whether with melodies or without" (al-Ghazālī: 215).

The Origins of Music Therapy

After mentioning the general principles regulating music, we will examine how music therapy started within Islamic world. Beside Greek medicine, also Indo-Persian medicine had a great impact on Islamic medicine, and its consequence was the building of the first Islamic hospital (Bīmāristāns) in Baghdad, in which Hārūn ar-Rashīd's vizier, Yaḥyā ibn Barmak, promoted the translation of Indian medical works (late eighth century). Galen's medicine was still very prominent, and its "weight also worked to separate the hospital with the secular patronage from Muslim religious control and from integration into Muslim education. The concentration on Galenic texts, whether in Syriac or in Arabic, remained an important feature in Islamic society, lacked any criteria for medical expertise except the doctor's demonstrated knowledge, primarily of the Greek classics." (Dols 1992).

When the Arabs invaded the Middle East and North Africa in the seventh century A.D., they included within their scientific culture, already enriched by other cultures, especially that of India and Egypt, the Greek scientific knowledge, too. As Dols affirms, "The predominance of the Greek tradition was largely due to the Hellenized Christians, Jews, and Persians, who made up the bulk of the population in the newly established empire, and to the persistence of their centers of learning." (Dols 1984).

[6]**Qaḍīb "**is a rhythmic wand used by early musicians and Qur'ān readers". Farmer (1939) "A Maghribi work on musical instruments." In *The Journal of The Royal Asiatic Society:* 339-53.

> "After the death of the Prophet Muḥammad in 632 and the defeat of the tribes of Central Arabia which had revolved against Islam, we come to the unparalleled expansion of the Arabs: within a century they had created an empire from Spain to the valley of Indus. With Egypt, Syria, Mesopotamia and Persia, countries had fallen to them whose population had reached a high level of culture, which was shot through with Hellenism and thus in certain area presented a relatively uniform picture. After the Near East had been more and more Christianized, Koine-Greek lost in significance in this area as *lingua franca*, while the native languages, Aramaic in Syria and Iraq, Coptic in Egypt, and Pahlavi in Persia, flourished again." (Ullmann 1978).

The consequence, was that, scholars, once lost the familiarity with the Greek language, because the Umayyad caliphs were not interested in keeping the Hellenistic culture, felt the urge to translate the Greek works into their own languages.

Al-Kindī (الكندي) (ca. 801-866), the first philosopher of the Islamic world, wrote many treatises under the influence of ancient Greek philosophers whose works had been translated into Arabic. He established the foundation of Islamic philosophy, which would, then, be developed by Muslim philosophers such as al-Fārābī (ca. 870-950) and Ibn Sīnā, (980-1038), and by European scholars only after the twelfth century. In ancient Greece and in the Islamic world, music was regarded as a science adjacent to philosophy. Hence, al-Kindī's musical theory must be analyzed from the philosophical point of view. In his treatises on music (*Music and Ecstasy*, and *The Mysticism of Sound and Music)*, he evidences his notation, which utilizes the chromatic scale. He was also the first to create melodies using the letters of the alphabet: A. B. J. D. H. W. Z. H. T. Y. K. L.

This phonetic notation had been applied long before the European notation, and was also prior to that attested by al-Fārābī, who used onomatopoeia – tan-tanan-tananan – in order to beat the time. While giving a description of the *'ud* and its strings, he explains the method of tuning the strings, then, that of playing, and constructing the instrument respecting its size. Al-Kindī was not only indebted to the Greek theory, but he enriched it adapting it to the Islamic musical tradition. In fact, he connected the *'ud* with cosmology, and emphasized the heavy influence each string has upon the soul (Arai 1994). Rather than using music purely for entertainment, he suggests using it as a resource to improve health, thus, making a connection between music and medical science. In the 9th century A.D., al-Kindī cured with music a child, who was completely paralyzed. In his book *Risalah Fi al-Luhun wa al-Naghmi*, he describes the relationship between astronomy and music, which, according to him, can be explained by emphasizing the relationship between harp strings and astrology.[7] Al-Fārābī (الفارابي), wrote *Kitāb al-mūsīqā al-kabīr* (*The Great Book of Music*).

Other experts in music theory were Ibn Khaldūn, the Ikhwān al-Ṣafā' (اخوان الصفا) and Ibn Sīnā (ابن سينا). The latter tells us that the practical musicians had a

[7]Al-Kindī in the *Forty Chapters on Judicial Astrology*, and *Theory of The Magical Arts*, because of his interest in 1celestial influences on earthly phenomena, explores the relationship between harp strings and astrology. He examines the impact of celestial configurations on human affairs. He points out how humans could interact with the broader universe, so as to create a relationship between the celestial and terrestrial realms. The vibration of the harp strings can be associated with the vibration of the movement of the celestial body and the vibrations produced by the movement of our organs. (Cf. Burnett 2008).

specific notation when playing the lute (e. g. L third string; Z first, etc.). He, like the Ikhwān al-Ṣafā', used onomatopoeia to measure rhythm.[8]

Being a very advanced physician, Ibn Sīnā linked emotions to physical conditions, so that music could be included within the physical and psychological field. (cf. Ahmad 1996). When analyzing music, Ibn Sīnā traces a parallel between the perception of sound and its communicative role, drawing parallel lines between sensory and cognitive behaviour, as well as between biological and aesthetic features. We find these medical suggestions in the *Resāla fi'l-nafs* which contains a paragraph on the perception of sound. The physics of sound production is explained in the first chapter of the *Resāla fi makārej al-ḥorūf,* while the human and musical pulse is discussed in the *Qānūn fi'l-ṭebb.* He views music as a means of communication which also can infuse joy or sadness, tension, and relaxation, because of its capacity to share feelings through vibrations.[9]

Music from Mathematics to Medicine

Ibn Sīnā, in his books *Ketāb al-najāt, Dāneṣ-nāma-ye'alā'ī* and *Ketāb al-Ṣefā*, by following the Greek tradition, considers music as one of the mathematical sciences. Mathematics helps music especially when it deals with the addition and subtraction of intervals and their doubling and halving. He has openly admitted the influence of Aristotle and Ptolemy. He followed al-Kindī's classification of music viewed as a branch of mathematics. In fact, chapter three of his book on music, which became the most widespread work on the matter (*Risāla fī 'ilm al-mūsīqā* — رسالة في علم الموسيقي), is also called: *Mathematical sciences which is on the science of Music*. Discussions on the phenomenon of sound, the dissonants and the consonants, lute fretting, and references to melodic modes by specific names, are found in most of his writings. In addition, he doubled the fourth and the fifth.[8] Furthermore, Ibn Sīnā is very famous for his work *Canun of Medicine* (قانونالطب في), a 14-volume medical encyclopaedia completed in 1025. *The Canun of Medicine* was the first book dealing with experimental medicine. Another of Ibn Sīnā's masterpieces, *The Book of Healing* (كتاب الشفاء), defines the four sciences of the *quadrivium* (arithmetic, geometry, astronomy, and music), and analyses the mind, its development, the mind and body relationship, sensation, perception, etc. His thesis is that, at the most common level, the influence of the mind on the body can be seen in voluntary movements, because the body obeys whenever the mind wishes. He further wrote that the second level of influence of the mind on the body comes from emotion and will. Avicenna, as this philosopher is known in the Western world, also gives

[8]I have seen those who were writing the rhythm as they heard it, as quickly as possible. … Music derives its principles from the science of nature (physics) and the science of numbers (mathematics)." (Ibn Sīnā 1987).

[9]When discussing the nature of sound, viewed as a psychological aspect of the human voice, he provides a distinction between articulate (speech) and inarticulate sound, evaluating the importance of the level of the voice, according to its communicative effects: lowering its intensity when hiding or expressing both weakness and obedience; using a very strong and loud intonation for communicating thread and potency. Music is the highest degree of communication because it regulates information by using a pleasant sound.

psychological explanations for certain somatic illnesses, so he linked our body to our feelings, one influencing the other.

Al-Kindī, al-Fārābī, the Ikhwān al-Ṣafā', Ibn Sīnā, al-Ghazālī, Ibn Khaldūn applied the theory of numbers, and astronomy to music. In so doing, while studying the celestial bodies, they found out that our planet does not perform a perfect circular movement around the sun, but its motion is subject to the distance of other planets influencing it. Thus, by including music into the sciences of the *quadrivium*, they could develop a more sophisticated musical theory. The fact that Arab music has used modes since the very beginning means that it has always recognised mathematical sequences.

Ibn Khaldūn, in the section on *Music*, considers music a mathematical science, too, and he says that music harmony touches the soul in the same way as poetry does.

> "But the truth is that listening to music and sounds no doubt causes pleasure and emotion in the soul. The spiritual temper of man is thereby affected by a kind of elation, …. Camels are influenced by the driver's call, and horses are influenced by whistling and shouting, … The effect is greater when the sounds are harmonious ones, as in the instance of music. It is known what happens to people who listen to music.214. The third mathematical science is music. It is the knowledge of the proportions of sound and modes and their numerical measurements. Its fruit is the knowledge of musical melodies." (Ibn Khaldūnn 1967).

When he talks of 'noble crafts', he includes singing, too:

> "The craft and science are the result of man's ability to think, through which he is distinguished from the animals. Crafts noble because of (their) object are midwifery, the art of writing, book (production, singing and medicine. Singing is the harmony of sounds, and the manifestation of their beauty to the ears.318 … the setting of poems to music by scanning the sounds according to well-known fixed proportions, which causes any sound (complex) thus scanned to constitute a tune, a rhythmic mode. These modes are then combined with each other according to accepted proportions. The result is pleasant to listen to because of its harmony and the quality that harmony gives to the sounds. … Beauty in the objects of hearing is harmony and lack of discordance in the sounds. Sounds have certain qualities. They may be whispered or loud, soft or strong, vibrant or constrained, and so on. Harmony between them is what gives them beauty.329. … for we find people who are gifted by nature for the metres of poetry, the rhythms of the dance, and similar things. … The Arabs originally had only poetry,"
> which they appreciated very highly. It was distinguished in their speech by a certain nobility, because it alone possessed harmony. They made poetry the archive of their history … They (the Arabs) repeated sounds and hummed them. When such humming was applied to poetry, it was called singing." (Ibn Khaldūn 1967).

He, then, distinguishes between oral and written communication as a gift God gave to the human being who possesses the soul which is "the storehouse of human sciences." In it "God has implanted perception, enabling it to think and, thus, to acquire scientific knowledge." (Ibn Khaldūn 1967).

The Contribution of Arab Scholarship to Music and Medicine: Ibn Sīnā

> The point, I think, is not that one (the West) or other (Islam) picture is more true or has a monopoly of truth. It is that misunderstandings arise when we fail to appreciate how others look at the world, its history, and our respective roles in it. … If there is much misunderstanding in the West about the nature of Islam, there is also much ignorance about the debt our own culture and civilization owe to the Islamic world. It is a failure which stems, I think, from the straitjacket of history which we have inherited.[10]

Islamic civilization once extended from India to the Atlantic Ocean. Many places around Europe attest the heritage of Islamic tradition whose medical imprint, between the years 800 and 1450, has often been undervalued. Sicily, Napoli at the time of Frederick II, and Salerno with its first medical school in Europe based on Ibn Sīnā's, *al-Qānūn* fi' *l-ṭibb*, as well as the great architectural buildings in Andalusia (the Alhambra in Cordoba, and the Giralda in Seville), are only a few examples of this heritage. Suffice it to say that, in Europe, medical care was only provided by priests in sanatoriums, while the main Arab hospitals were also centres of medical education with highly developed structures; structures introduced in modern Western hospitals much later, as for examples: separate wards for men and women, medical records, pharmacies, and above all personal hygiene. In the 13th century, Ibn al-Nafīs described pulmonary circulation, and Abū al-Qāsim wrote the *Taṣrīf*, the leading medical text, later used in European universities. Important names within Islamic medicine are Al-Zahrāwī, who described the hydrocephalus and other congenital diseases, Al-Rāzī, who studied the smallpox and measles, and Ibn Ruṣhd, whose medical books were also introduced in most European universities. Furthermore, some new surgical technologies such as sutures were applied during medical care.

In brief, Ibn Sīnā's greatest contribution was in the philosophy of medicine because he integrated medicine with psychology, philosophy, and music. When he talks about education, music and sport are highly considered, since music stimulates motion. Music arouses pleasure, joy, purity, and a sense of exaltation, and through it, the child is able "to perceive harmony and discord, treble and bass and how this comes about." ('Abd al-Rahmann al Naqib, 1993: 5369). He analyzed the vibrations of the body (beats, pulse, breath, hearth, etc.), and associated them to the musical intervals. In so doing, he elevated music to a medical branch. Thus, music officially entered hospitals, especially psychiatric wards. Ibn Sīnā evaluates music from the functional and the aesthetic side. While analyzing its order and composition (loudness, consonance and dissonance, genres, melody formation, rhythm, poetic meters, suspension as well as musical instruments), he discusses the evanescence of sound (sound is not permanent in both speech and music), and how the sound of both voice and music focuses on emotion. When the voice stops, or there is a musical suspension, or a sound interval, the listener's soul reacts with a sense of dread. When it reappears, the soul is pervaded with joy.

This aspect of sound and voice is related to the human and animal capacity to use them when, not only there is an urgency for communication, but also when our soul feels to interact with someone else. Under this profile, language and sound are

[10]A speech by HRH The Prince of Wales titled 'Islam and the West' October 27th, 1993.

perceived as psychological means of communication. For this reason, medicine, for Ibn Sīnā, is both a science and an art, because, within the Islamic world, art belongs to every field, to any activity in which humans get involved in order to both survive and alleviate others' suffering. In fact, talking with patients was part of the medical therapy.

> "Medicine (*ṭibb*) is the science by which we learn the various states of the human body in health, and is the means by which health is likely to be lost and, when lost, is likely to be restored back to health. In other words, it is the art whereby health is conserved and the art whereby it is restored after being lost." (Avicenna 1999).

Ibn Sīnā, in order to emphasize that pleasure arises from harmony, describes the vibrations of both music and language, and the evanescence of sound, which gives harmony through the regularity of beats. He, then, links the basic features of music and language to the physiology of the body. In fact, while a regular respiration becomes "rapid and irregular" the "affected organ first becomes hot and later on becomes cold" (Avicenna 1999), so, pain comes because the harmony of the body has been lost. In order to restore pleasure, which is "a perception of harmony", it is necessary to create harmony by generating a sense of continuity, an essential perception. Ibn Sīnā takes this notion not only from his musical knowledge (he was an expert composer and performer, too), but also from Galen's teachings:

> "According to Galen, loss of continuity is the only real cause of pain. … the sight of a white object is painful due to the active dispersion produced by them … . Smell and hearing also act in a similar manner. Loud noises set up powerful waves in the air which strike against the ear (drum) causing dispersion. Pain is undoubtedly a sudden perception of a contrary object or quality." (Avicenna 1999).

Since voice and music express and stimulate our emotions (emotivist versus cognitivist position),[11] all their ranges (pitch, vibration, tone, rhythm, loudness or lowness, interval) acquire a metaphorical meaning revealing and enhancing feelings. Thus, joy and health or sadness, melancholy and illness depend on the harmony established in both the body and the mind. This harmony, Ibn Sīnā attests, is mainly caused by the kind of breath a person possesses.

> "… it may be said that when the breath residing in the heart is plentiful (…), when it is balanced in temperament; when it has a luminous, beautiful, and bright substance then there is a strong tendency to joy. When the breath is scanty (in convalescents …); and when it is: a) very dense and coarse in substance (as in melancholy and elderly people), it cannot arouse joy; b) very delicate (as in convalescents and in women), it will not allow of expansion; and c) confused (as in melancholy people). In all these cases there is a strong tendency to depression, sadness, and grief. 149. To stimulate a correct breath, he suggests, "aromatics are so much better … ." (Avicenna 1999).

[11]According to the cognitivist position, music expresses emotion but does not induce it in listeners. So, listeners may recognize emotion in music without feeling it, unlike real, everyday emotion. According to the emotivist position, listeners not only recognize emotion but also feel it. Cognitivists: Konečni 2007, Meyer 1956, Emotivists: Gabrielsson 2002, Juslin and Västjfäll 2008).

Once the harmony of continuity and the consequent pleasure for the *known* has been broken, expectation is reinforced, and so, new goals appear to activate new expectations. Music and language with their vibrations, often interrupted, even though interruption might generate a sense of panic for the coming *unknown*, because there is a suspension of the pleasure coming from the *known*, they trigger new expectations, and so they mobilize the mind and the body (the brain organizes its areas to plan new aims) toward achieving new goals. The pleasure felt because of regular pulses (vibrations), which are linked to the *known*, is only a false perception of harmony. In fact, *the unknown*, *the desert*, according to Sergio Piro, (Piro, 1993), the 'suspension' in music[12], even though at first, might distress, confuse, and obscure the mind, rather they capture the strength for searching new roads, for achieving new goals. Ibn Sīnā, while linking the effects of music to those of the language and the pulses of the body, supports the idea of change/suspension, and concludes that the very "delight implies attaining a goal, and the one who apprehend it can only be aware of the delight because he is aware of the change. … Once the polarity has reached equilibrium, the character of the organ will have become 'setup' and cannot provide further change. From this time there ceases to be any sensation of pleasure." (Avicenna 1999).

When studying psychological symptoms, Ibn Sīnā claims that melancholia is a type of mood disorder in which the person might become suspicious, even developing certain types of phobias. He states that anger, too, might turn melancholia to mania. In so doing, he explains that a certain kind of 'humidity' inside the head, contributes to the development of some mood disorders. He found out this reaction after recognizing that this state occurs when the amount of breath changes. For instance, happiness increases the breath, which leads to increased moisture inside the brain, but if this moisture goes beyond its limits, the brain will lose control over its rationality, and, consequently, produces mental disorders. He also wrote about symptoms and treatments for nightmares, epilepsy, and weak memory, and applied psychological methods when treating his patients, mostly using music.

Emotions, Music and Healing

Ibn Sīnā, who reserved 12 chapters to music in his books *Kitāb al-Naj'āt* and *Kitāb al-Šifā*, demonstrated the close relationship between emotions and physical conditions. He then insisted on the definite role of music to heal psychological disorders. He says that the most effective of treatments is to strengthen patients' mental and spiritual energy by creating a loving and pleasant environment enriched with music, to give them more courage to fight illness. This happens because sound is an essential feature of our life, especially when it is associated with human voice and musical instruments; it is the quality of sound which creates an artistic composition. Changes of pitch, too, capture our perception and have a strong effect on our soul.

In the 18th century Hekimbaşı Gevrekzade Hasan Efendi,[13] who translated *The*

[12]Suspension in music is a means of creating tension by prolonging a consonant note while the underlying harmony changes, normally the prolonging note is on a strong beat. The result is a dissonance.

[13]Hekimbaşı Gevrekzade Hasan Efendi was a scientist, who, during the Ottoman period, wrote medical books about new diagnosis and treatment of diseases. Archive (2011) *Emraz-ı Ruhaniyeyi Negama-ı Musikiye*.

Canun, by following both al-Fārābī's and Ibn Sīnā's principles, in his work, *Emraz-Ruhaniyeyi Negama-ı Musikiye*, outlines a series of effects induced by different maqām (melodic modes) during the treatment of various childhood diseases: Irak maqām – childhood meningitis; Isfahan maqām –- colds and fevers; Zirgüle maqam –- heart and brain disease; Hicaz maqām –- the urinary tract, etc. This practice was used by al-Fārābī, who classified the effects of the tonalities to the soul as follows: Rast tonality: induces joy and feelings of peace; Rehavi tonality: induces feelings of infinitude; Kuchek tonality: induces feelings of sorrow and grief, and many others. (Sadık Yiğitbaş 1972, cf. Güvenç Rahmi Oruç 1986).

Through music, people can express grief, joy, heroism, excitement, love and so on. The performance of different pieces of music, the tonalities, the melodies of each *maqām*, while providing various rules for the composition, offer a large variety of opportunities according to various situations. Al-Fārābī established that each musical piece becomes more effective if used according to the different hours of the day: Iraq *maqām* is more effective in late afternoon, Buzelik *maqām* in mid-morning, Zirefkend *maqām* before sleeping, etc.

By following al-Fārābī's classification (later accepted by Ibn Sīnā), which relates each disease to a specific time of the day, the melodies tuned should respect a specific schedule. As we have previously seen, also the Brethren of Purity[14] insist on the therapeutic value of music. When discussing the soul, the brain, and the processes of thought, they were very conscious of the effects of music on the three parts in which they had divided the soul in line with al-Fārābī: 1) vegetative, 2) animal and 3) rational. Each part, while carrying out a specific task, needs a specific kind of melody, which stimulates the activity attended. So, each soul has a distinct faculty: 1) the vegetative is concerned with nutrition, growth, and reproduction; 2) the animal with movement, sensation, perception and emotion, 3) the rational with thinking and talking. By introducing music into hospitals, they gave evidence that there is a close relationship between body and soul. In so doing, they established the theoretical basis of psychosomatic therapy.

In brief, the Brethren of Purity summarized, from the Sufi's view point, the basic principles about mental hygiene or mental health throughout a process of music therapy. According to the history of Islamic civilization, the Sufi have always been involved with music, and they have applied it in many different fields. They rely on music to cure mental and nervous disorders. Sufi music was and is still used as a means for achieving an ideal perfection: a kind of perfection which means harmony with oneself in order for the soul (نَفْس *nafs)* to stay as near as possible to God.

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[14]The Brethren of Purity or Ikhwān Al-Ṣafā are a group of Muslim philosophers in Basra (Iraq) born in the 9th or 10th century CE. As emphasized by Godefroid de Callatay, it is difficult to identify the Brethren of Purity, so he claims that "the *Epistles were composed by a group of idealists who saw themselves* as called upon to purify Islam, based on Revelation and expressed above all in a law, by combining it with philosophy of Greek derivation. (Godefroid de Callatay, 2005: 5). Cf. Wright O. (eds.) (2011). *On Music*; cf. AL-BIZRI, N. (2012).

[14]Just to stress again the link between music and voice, the most important form of Sufi music is called *Qawwali*, which reminds the way of speaking (street singer الْقَوَّ; utterance قول;III Form قَاوَل;I Form قَالَ). Poetry and music are two features that elevate the soul. "The act of singing poems in a musical setting, amplifies their impact. … each note struck and each word penned is a step closer to the essence of what Sufis call the 'Way of the Heart'." (Stephens 2023).

The heart is for the Sufi the centre of the human existence as well as the main organ which can attest, through the feeling of love, the existence of a Superior essence. Viewed under these premises, music has an educational and a religious approach used to achieve the highest position in this world; in other words, the nearness to God. Once music officially entered the medical practice, it followed the principles, as established by Ibn Sīnā:

> "Medicine is a science from which one learns the conditions of the human body with regard to health and the absence of health, the aim being to protect health when it exists and restore when absent…. both parts of medicine (theoretical and practical) are science, but one part is the science dealing with the principles of medicine, and the other with how to put those principles into practice … Thus, if medicine is a complete science, and music belongs to it, then music is an integral part of this branch, so it has to cure as well as to prevent psychological disorders by following a timetable as suggested by the disorder it has to repair, whose symptoms increase or diminish according to each part of the day When the notes are combined in rhythmic melodies (*alḥān*) corresponding (*mushākila*) to them, and these melodies are then used at the times of day or night whose nature is counter to that of the prevailing illnesses and sicknesses occurring, they will alleviate them, reduce their severity, and ease the pain they inflict on the sick," (Ibn Sīnā *Book of Healing* 2005).

Music Therapy: Music and Breath

In contrast to music therapy as used during the Middle Ages in the Middle East, music therapy arrived very late in Europe. In fact, when the Ottomans were treating mental illness with Sufi music, in the Western world, people with mental health problems were locked away in psychiatric wards. In Italy psychiatric hospitals were closed only in 1978 after the 180 law as attested by Basaglia and Piro, who opened special Mental Health departments. Nowadays, Western society has not yet fully perceived the great role of music, and consequently of music therapy.

Going back to the issue of harmony as stated above (harmony is achieved by controlling breath vibrations), it is interesting to point out that in Sanskrit the semantic value of *Prana* fluctuates between 'life' and 'breath.' Music helps to achieve the necessary harmony to keep healthy both the body and the soul. Meditation, called in the Vedanta *Samādhi* (to put together-to establish a relationship with God), helps to achieve that harmony through specific breathing exercises.[15]

> "Music and healing have been tied together throughout history. The continuing 30-thousand-year-old shamanic tradition of music and healing is still being practiced throughout the world. (p. 271). The Greeks philosophers Plato and Aristotle wrote on how to use music to affect health and behaviour; music continued to be tied to healing throughout the Middle Ages and later. Music has been used to treat both physical and mental problems in the United States since the late eighteenth century. … the first music therapy degree programme in the world began in 1944, followed by the first music therapy association in 1950. … The American Music Therapy Association, … was established in 1998." (Thaut and Wheeler 2011).

[15]Cf. Eliade (1997) note 19 chap. II.

Starting from the early considerations about the origin of music, it is fair to say that, if we consider that anything in our world produces vibrations in the atmosphere, and even the smallest movements or the smallest objects cause vibrations inside and outside our body, in order to be in perfect health our body requires a harmony of vibrations generated by the rhythm of our breath. In brief, soundwaves, accompanied by rhythm, are all around; therefore, it is easy to understand how strong the force of sound with its rhythm is to heal a suffering body. Breath regulates the rhythm of our blood circulation, the beating of our heart, the rhythm of the pulse and of any smallest part of our body. It is worth restating that when breath loses its rhythm it requires medical treatment to restore a perfect harmony. Hazrat Inayat Khan articulates this notion in the following way:

> "The vibration which is necessary for our health is created in the body by their power (medicines). The rhythm which is necessary for our cure is brought about by bringing the circulation of the blood into a certain rhythm and speed. By this we learn that health is a condition of perfect rhythm and tone. And what is music? Music is rhythm and tone. When the health is out of order, it means the music is out of order." (Hazrat Inayat Khan 1921).

Even though in the context of Islamic civilization, in the Medieval era, physicians recognized the high value of music therapy, however, music therapy was never used as the only treatment for various illnesses, and above all for the insane. Rather, it was associated with medications. Dance, songs, *al-Qur'ān* recitation (تجويد *tajwīd*), the calling for prayer (أذان adhān) from a nearby mosque, listening to stories, as well as to the melody of the jets of water fountains, and even watching comedies, were all features viewed as complementary treatments to restore health in the body, in the mind and in the soul. In doing so, stress was reduced, and symptoms were soothed, since the person's attention, distracted from pain, could calm down.

In brief, according to Ibn Sīnā and the Ikhwān al-Ṣafā', music helped in healing since it: 1) relieves pain while entertaining, and 2) strengthens the antibodies to diseases. Ibn Sīnā and the Ikhwān al-Ṣafā' combined the sound of voice (storytellers and singers), the sound of music (melodies) helped by instruments like the pipe, the lute, the *ud,* and the reed-flute, with the sound of water and the singing of birds, with massage and aromatic baths (Ibn Sīnā *Book of Healing*), so to stimulate the soul, and to enhance emotions and aesthetics, too. Sufis associate each instrument with the soul, so they say that

> "Wind instruments, like the flute and the *algosa* (a double flute), express the heart quality, for they are played with the breath which is the very life; "749. … motion is the sign of life, and when accompanied with music it sets both the performer and onlooker in motion. … Among Sufi in the East, dancing takes place at their sacred meetings called Sama'761… vocal music is considered to be the highest, for it is natural; the effect produced by an instrument which is merely a machine cannot be compared with that of the human voice." (Hazrat Inayat Khan, 1921)

Under this perspective, the cantillation of *al-Qur'ān* was an important part of music therapy. The aim was to help the patient to achieve a certain harmony not only within himself/herself, but also with God, because in the Islamic context religion

has always occupied a high role. Music therapy was also specifically applied to cure some mental disorders such as melancholia, insomnia, and lovesickness. In the *Qānūn,* Ibn Sīnā says that the rhythm of *al-hazaj* and *al-thaqil*, combined with bath therapy, recreation, rubbing milk on the head, etc. are extremely useful. Of course, in order to apply this advanced therapy, the hospitals, called Bīmāristāns, had a very sophisticated architecture. They were exceptionally large palaces, with beautiful gardens and many fountains, with specific rooms equipped to gather musicians, dancers, singers and *qurrā'* (قُرَّاء) who were engaged regularly to play their music and to recite the *Qur'ān* with melodious voices according to the rules of *tajwid*, thus creating a relaxing and peaceful atmosphere. In essence, music therapy was applied to all patients either mental or physical.

The most important Bīmāristāns were: in Morocco Bīmārīstān Fez, in Cairo Bīmāristān al-Mansuri, in Aleppo Bīmāristān al-Arghuni, in Damascus Bīmāristān Nur al-Din, in Istanbul Fatih Darussifas, and many other. They all shared the same characteristics both in their organization and in their architecture, so that, nowadays, because of their sophisticated architecture, some of them have been turned into museums.

Music Therapy in the West

With regret, we must admit that, despite positive experiences of music therapy in the Islamic world at the time of Ibn Sīnā, as well as in the West nowadays, at present, music therapy has not yet officially entered hospital organizations. We find it only in some paediatric private institutions, where music is used to relieve children's physical pains. In combination with specific musical modes for the young, a group of clowns attracts attention with sketches whose aim is to involve children to participate actively even suggesting new songs to the actors. They are also asked to draw and colour whatever they like, stimulated by some shows. On these occasions parents are invited, thus sustaining and motivating their children, especially the very shy ones. Here, in Italy, music therapy is not yet formally included in medical programs either for physical diseases or for the insane, but in Napoli the children's hospital Santobono, often organizes clowns' shows. The Cotugno and Monaldi Hospitals play *Ave Maria* by Gounod at 12 o' clock every day. That sound spreads a pleasant harmony which gives a sense of peace to the patients and their visitors. Music therapy is sometimes applied only in private departments for elderly people and for pregnant women Occasionally, music and theatrical performances enter jails together with theatrical performances, in which people with mental health problems are actors in the play.

In the United States, the American Music Therapy Association (AMTA) defines Music therapy as "The clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program." (AMTA) However, according to the information provided by the AMTA, music therapy has not yet entered formally any governmental health program. Despite music therapy has revealed positive results, it has not yet received much attention in hospitals. However, the scientific research in this field is very active, and neuro-imaging, too, helps to

establish how the brain reacts to the stimuli received by music. The brain is observed under various situations concerning either general sounds or music input in order to control how the different areas of the brain react, and to visualize the areas involved.[16]

Some theories (Poeppel 2003) establish that "perception of the rapid but spectrally coarse timbral contrasts of speech relies more on the left hemisphere circuits, whereas analysis of slower but more spectrally refined pitch contrasts of music relies more on the right hemisphere circuit." (Patel 2008). There are many scientists who argue that music is especially important from an early age in order to stimulate cognition and behaviour during childhood. Furthermore, music provides: 1) to slow down the aging process in general, and Alzheimer's in particular; 2) to alleviate and enhance cooperation and social aggregation in autistic and Williams Syndrome children; 3) to activate the mind, and 4) to maintain the body in good health because it increases physical movements (gymnastic and dance). Neuroscientists study how music enhances and provokes feelings, which have influential effects on the brain, by stimulating and correlating areas which, in the past, were viewed as separate.

> "Recent developments in brain research and the neurobiology of music are altering concepts of music therapy. As the neurological basis of music and the effect of music on brain plasticity are better understood, a new scientific framework for the rationale of music in therapy is emerging. It is now clear that music can influence, shape, and educate cognitive, affective, and sensorimotor processes in the brain that can also be transferred and generalized to non-musical brain functions within a therapeutic model:… Music may be described as an aesthetic, sensory-based language consisting of spectrally and temporally highly complex auditory patterns that perceptually engages cognitive, emotional, and motor functions in the brain." (Thaut and Wheeler 2011).

In music psychotherapy, the focus is on emotion, as well as cognitive or physical functioning, since music activates motion, and so it is important to acquire and develop rhythm and time.

> "One remarkable and often-noted property of music is its ability to evoke a sense of motion in a listener. One example of this is our tendency to synchronize to a musical beat, a response that appears to be uniquely human." (Patel 2008).

> "Playing music exercises attention and memory. And, like any other skill, exercise leads to improvement. Thus, it is reasonable to express that music playing might be an exercise that would strengthen these cognitive abilities.104. … Therapists have long used our capacity to perceive sound patterns to strengthen communication skills. They rely on rhythm and the concepts of entrainment to a beat, violations of a beat, and pattern recognition as core features of their protocols, reminiscent of the scene in the Colin Firth film *The King's speech*, where George VI overcame a stuttering problem by rhythmically singing his words. Rhythm-based therapy has a growing status in recovery from concussion and other brain injuries, addressing both cognitive and emotional health. … to pace walking in individuals with movement disorders such as Parkinson's disease…. Other disorders that involve movement, such as aphasia, stuttering, difficulty with respiration, swallowing, and speaking, respond to music

[16]In other words, the association of music and language in the brain. Cf. Marin and Perry-1999, Patel also discusses how language and music share common neural substrates (Patel 2008).

> therapy. 122 … Physical training has positive effects on sound processing and contributes to overall brain health." 253 (Kraus 2022).
>
> "… while music can affect all of us – calm us, animate us, comfort us, thrill us, or serve to organize and synchronize us at work or play – it may be especially powerful and have a great therapeutic potential for patients with a variety of neurological conditions." (Sacks 2007).
>
> "When used in therapy, music can evoke positive emotional responses, help manage stress, eliminate agitated mood swings, and help with cognitive and motor functions." (Saunders 2017).

At last, in order to enhance music therapy, we focus on Herbert Spencer, who recognized a positive influence of music on the mind and the body. His definition seems belonging to the present idea of music therapy: "In primitive conditions music is, first of all, a social diversion or play, affording an outlet for surplus animal spirit, stimulating emotional excitement, and helping to maintain muscular and nervous energy. Singing and dancing are always conspicuously social – a center of interest for perhaps a whole village or tribe." (Spencer 1890).

Conclusions

In conclusion, having added to the diachronic analysis, also personal experiments with children and adults in school context and private institutions, as attested in my previous articles, music seems to enlarge its importance during the whole of our life.[17] In fact, music stimulates our senses, and the movements of our body, too, because it enhances blood circulation by providing oxygen to the brain.

Experiments developed with school children (from 7 to 13 years old), and with adults (with and without age problems) have revealed the importance of music and of music therapy to help people from many different directions as attested by the former studies in this field. In fact, the question about the origin, the value of music, and its use, has puzzled scholars for centuries, and it is still a considerable field of research.

Music is useful with young children, because it activates the cerebral areas as well as the nerves and the muscles of the body by strengthening them, so a child will be able to improve, at first, how to hold a pencil, then a pen, then a ball, then may be how to hold a violin or how to move fingers on a piano. It is a great resource for children's cognitive growth as an educational aid. It is useful for old population, because it alleviates and fulfils the long days with its melodies, which sometimes cancel sadness and troubles. In addition, for adults, music stimulates new synapses replacing the loss of neurons.

We have seen that the Arabs, who could appreciate the sound of music through

[17]D'Acierno Canonici Cammino M.R., Come aiutiamo il nostro corpo, la nostra mente e la nostra voce ad adeguarsi a tutti i tipi di cambiamento sociale ed intimo, in *Psicologia Fenomenologica*, 15-11, 2023. La Sindrome di Williams tra fonetica sperimentale, lingua straniera e musica. Studio su un soggetto bilingue. In *Il parlante e la sua lingua* (a cura di D. Locchi) Atti A.I.A.13-15 dicembre 1999 Istituto Universitario Orientale, Napoli, Vol. xxvii. The inter-relationship between language, music and movement: pattern learning, in *Athens Journal of Sports*, 2 (1), I 2015: 17-30.

poetry, and then, through the cantillation of the Qur'ān,[18] soon realized the force of music in conjunction with the sound and the vibrations of the human body. They tried to establish a musical theory based on the observation of the physical world and on mathematics, and decided that, for its emotional, communicative and aggregational role, music could enter the world of medical care. At the beginning, the East had two schools of medicine: one coming from Greece through Persia, the other from the Vedanta based on mysticism whose founding principle was to achieve harmony by controlling breath vibrations. For this reason, during the centuries, step by step, vibrations have been acquiring communicative features while turning into both speech and music.

Language (speech) and music (sound) share structural similarities (pitch, duration, timbre, intensity, accent, rhythm, and inflection patterns). Physical vibrations are transduced inside our hearing apparatus into electrochemical information that goes, through the neural relays of the auditory system, into the brain. Both language and music have a social and an intimate role, but, while language has acquired different features concerning the context in which it developed, music has added to its cultural traits universal meaning, too; thus, enhancing a wider sense of unity and participation. Rhythm, as Hazrat Inayat Khan claims, controls life in every direction, making it the most important means of improving human life. Language and music are inborn human faculties in which, according to Steven Pinker, both genes and environment play a role. (Hazrat Inayat Khan 1923, cf. Pinker 2002).

In conclusion, the debate about who invented music, has to concentrate on music as part of our life, because it comes from the essence of the physical world (the celestial sounds) and the essence of our body (the sound of our blood circulation). In brief, music is an internal sound that comes out in the form of melodies or songs to reinforce body, mind, and spirit.

In order to emphasize the relevant role music has to alleviate our sorrow and to open our soul hoping for a better future, it will be useful to read Francesco Lotoro's book about the music within the Nazi concentration camps. After more than twenty years of research, he has found impressive documents about the music played, written and sung by those people who did not even have the strength to stand, because of their physical decline. Among the prisoners were also musicians, who wrote their music as a symbol of revolt and hope; a symbol that intensifies the deep role of music.[19]

Music didactic purpose comes clear from Mesopotamian bas-relieves, in which important social and religious ceremonies were always enhanced by music. Even funeral laments acquired a spiritual and metaphysical character in that society. Music had a prime role, when celebrating a victory after a war. The Ur Standard (2500 b. C.) depicts a singer and a zither player performing during a royal meeting. The Sumerians were the first people to form small orchestras with harps, flutes and drums. Since the iconographies related to this era show women and children playing

[18]"… the religions authorities considered the permitted forms of cantillation and folk songs as 'non-music', contrasting with *ghina*" (Shiloah 2007).

[19]Lotoro Francesco (Barletta 1964) is a pianist, composer and conductor. "Fare musica ha conferito un senso all'ingegno di chi nei Campi ha lasciato la propria vita, … Nel Lager i canti servirono a uno scopo per noi rivoluzionario. Ci incoraggiavano a continuare la nostra lotta per vivere e trovare la via della salvezza." (2022, 4).

and singing in these orchestras, it means that for those peoples, music had also a pedagogical role.

Nowadays, future medicine may benefit from both ancient practices and advanced technical instruments. As the following report attests, music therapy is increasing in use and application.

The Music Therapy Global Market Report 2025 has calculated that music therapy market reached $3.16 billion in 2024, and is expected to reach $5.91 billion by 2029.

Bibliography

Abd Al-Rahmann Al-Naqib (1993) Avicenna. *Prospects: The Quarterly Review of Comparative Education*, 23(1–2), 53–69.

Abu Ḥayyan (1978) Al-Tawḥīdī and The Brethren of Purity. *International Journal of Middle East Studies*, 9, 345–353.

Ahmad M (1996) Ibn Sina's Canon of Medicine: aspects of holistic medicine. *JIMA*, 28(2), 27.

Al-Bizri N (2012) *Epistles of the Brethren of Purity: On Arithmetic and Geometry*. Oxford: Oxford University Press.

Al-Ghazālī (2015) Music and Ecstasy. *Archive*, 162.

Amdānī A (2008) *The arrangement of the Rasā'il Ikhwān al-Ṣafā'*. In: El-Bizri N (ed) Epistles of the Brethren of Purity: The Ikhwān al-Ṣafā' and Their Rasā'il: An Introduction. Oxford: Oxford University Press.

Amaldi D (ed.) (1991) *Le mu'allaqāt*. Alle origini della poesia araba. Venezia: Marsilio.

Arai H (1994) Al-Kindi's musical theory. *The Journal of the Society for the Research of Asiatic Music*, 59, 1–22.

Avicenna (1999) The Canon of Medicine (adapted by L. Bakhtiar; series ed. S. H. Nasr). Chicago: Great Books of the Islamic World, Inc.

Becker J (1986) Is Western art music superior? *The Musical Quarterly,* 72(3), 341–359.

Besson L (1997) *The Fifth Element* [film].

Burnett J (2008) *Al-Kindī on Judicial Astrology: 'The Forty Chapters'*. Cambridge: Cambridge University Press.

Chomsky N (1975) *Reflections on Language*. New York: Pantheon Books.

Dabh H (1966) Arabic music. *The Arab World Magazine*, Jan–Feb, 4–7.

D'Acierno Canonici Cammino MRC (1999) *La Sindrome di Williams tra fonetica sperimentale, lingua straniera e musica*. In: Locchi D (ed) Il parlante e la sua lingua. Napoli: Istituto Universitario Orientale, Vol. XXVII; (2015) The inter-relationship between language, music and movement: pattern learning. *Athens Journal of Sports*, 2(1), 17–30; (2023) Come aiutiamo il nostro corpo, la nostra mente e la nostra voce ad adeguarsi a tutti i tipi di cambiamento sociale ed intimo. *Psicologia Fenomenologica*, 15(11).

Darwin C (1871) *The Descent of Man.* London: Appleton & Co.

Dols MW, Gamal AS (1984) Medieval Islamic Medicine: Ibn Ridwan's Treatise "On the Prevention of Bodily Ills in Egypt". Berkeley/Los Angeles/London: University of California Press.

Dols MW (1992) *Majnūn: the madman in medieval Islamic society*. In: Immisch D E (ed) Majnūn. Oxford: Clarendon Press, 171–173.

Eliade M (1997) *Lo Yoga: Immortalità e Libertà*. Milano: Rizzoli.

Farmer HG (1925) *The Arabian Influence on Musical Theory.* London: Harold Reeves.

Farmer HG (1937) The lute scale of Avicenna. Journal of the Royal Asiatic Society, 69(2), 245–257.

Foster C (n.d.) *Musical Mathematics.* The Crusalis Foundation, ch. 11: Word Tunings, part iv: Arabian, Persian, and Turkish Music.

Godefroid de Callataÿ (2005) *Ikhwan al-Safa'*. Oxford: Oneworld Publications.
Güvenç RO (1986) *Türk Musikisinde Kökler ve Batıya Yansıması*. Ankara: Sevinç Press.
Hasan Efendi HG (2011) Emraz-ı Ruhaniyeyi Negama-ı Musikiye.
Hazrat Inayat Khan (1923) *The Mysticism of Sound and Music*. Internet Archive.
Ibn Khaldūn (1967) *The Muqaddimah.* Princeton/Oxford: Princeton University Press.
Ibn Sīnā (1987) *Al-Qānūn fī'l-Ṭibb (The Canon of Medicine)* (ed. I. al-Qashsh). Cairo: Encyclopedia of Medicine.
Ibn Sīnā (2005) *Book of Healing*. Provo, UT: Brigham Young University Press.
Ikhwān al-Ṣafā' (2008) *The Epistles of the Brethren of Purity*. Oxford: Oxford University Press /Institute of Ismaili Studies.
Kraus N (2022) *Of Sound Mind: How Our Brain Constructs a Meaningful Sonic World.* Cambridge, MA: MIT Press.
Lemnius L (1658) *The Secret Miracles of Nature.* London: Jo Streater.
Lotaro F (2022) *Un Canto Salverà Il Mondo.* Milano: Feltrinelli.
Lyall CJ (1885) *Translations of Ancient Arabian Poetry*. London: Hogarth Press.
Marino S, Perry DW (1999) *Neurological aspects of music perception and performance*. In: Deutsch D (ed) The Psychology of Music. San Diego: Academic Press, 653–712.
Oruç GR (1986) Türk Musikisinde Kökler ve Batıya Yansıması. Ankara: Sevinç Press.
Patel AD (2008) *Music, Language and the Brain*. Oxford: Oxford University Press.
Pinker S (2002) *The Blank Slate*. London: Penguin Books; (2005) *How the Mind Works.* London: Penguin Books.
Pinkney S (1993) *The Mute Immortals Speak: Pre-Islamic Poetry and the Poetics of Ritual.* Ithaca/London: Cornell University Press.
Piro S (1993) *Antropologia Trasformazionale*. Milano: Franco Angeli.
Sacks O (2007) *Musicophilia: Tales of Music and the Brain.* New York: Vintage Books.
Sadık Y (1972) *Musiki İle Tedav.* Istanbul: Yelken Press.
Saunders LI (2017) *Your Brain and Music.* United States: Higher Purpose Publishing.
Schlesinger K (1925) *Is European musical theory indebted to the Arabs?* Musical Standard, May 1925.
Shiloah A (2007) *Music and its Virtues in Islamic and Judaic Writings*. London: Routledge.
Spencer H (1890) *The Origin of Music*. Torino: LM Publishers/Amazon Italia Logistica S.r.l.
Stephens T (2023) *Mysticism Sufism: The Way of the Heart.* S.D.N. Publishing.
Thaut MH, Wheeler BL (2011) *Music therapy*. In: Juslin P N, Sloboda J A (eds) Handbook of Music and Emotion: Theory, Research, Applications. Oxford: Oxford University Press, [chapter pp.].
Touma H H (1996) *The Music of the Arabs* (L. Schwartz, trans.). Portland, OR: Amadeus Press.
Wellesz E (1999) *Ancient and Oriental Music*. Oxford: Oxford University Press.
Wright O (2011) *On Music: An Arabic Critical Edition and English Translation of Epistle 5*. Oxford/New York: Oxford University Press.
Zarlino G (1558) *Le Istituzioni Harmoniche.* Venezia: Edizioni Zarlino.