TURKISH ACADEMIC RESEARCH REVIEW
TÜRK AKADEMİK ARAŞTIRMALAR DERGİSİ

Osmanlı Müzik Yazmalarında Pisagorcu Değişim

The Pythagorean Shift In The Ottoman Musical Writings

Hakkı Talha Koytak

Boğaziçi Üniversitesi, Siyaset Bilimi ve Uluslararası İlişkiler/Boğaziçi University, Political Science and International Relations, İstanbul/Turkey.
htkoytak@gmail.com

Orcid: 0000-0002-2516-8949

Makale Bilgisi	Article Information
Makale Türü-Article Type	Araştırma Makalesi / Research Article
Geliş Tarihi-Date Received	14 Kasım / November 2019
Kabul Tarihi-Date Accepted	25 Aralık / December 2019
Yayın Tarihi-Date Published	31 Aralık / December 2019
Yayın Sezonu	Ekim – Kasım - Aralık
Pub Date Season	October – November - December

Atıf/Cite as: **Koytak, Hakkı Talha, The Pythagorean Shift In The Ottoman Musical Writings/ Osmanlı Müzik Yazmalarında Pisagorcu Değişim**. tarr: Turkish Academic Research Review, 4 (4), 571-596. doi: 10.30622/ tarr.646983

İntihal /Plagiarism: Bu makale, en az iki hakem tarafından incelenmiş ve intihal içermediği teyit edilmiştir. / This article has been reviewed by at least two referees and confirmed to include no plagiarism. https://dergipark.org.tr/tr/pub/tarr

The Pythagorean Shift In The Ottoman Musical Writings

Abstract

It has been discussed throughout history whether we can examine and explain music autonomously or heteronomously. This article aims to discuss the autonomous-heteronomous approaches in Ottoman music through thirteen different musical writings, from Yusuf Kırşehri's Risale-i Musiki (1411) to Haşim Bey's Mecmua (1853). Early Ottomans and the Muslim philosophers before them, were greatly aware of the Pythagorean doctrines such as ethos and the Harmony of the Spheres, in which the music is studied heteronomously. However, an opposite line to Pythagoreanism, Aristoxenianism had also immense influence on the musical writings of Muslim philosophers and the early Ottomans. With the rise of Turkish musical writings in the 15th century, there was a shift from the autonomous approach of Aristoxenianism. The argument of this article is that this shift allowed the Pythagoreanism to dominate the musical thought in the following centuries and even today. This was not a success of the heteronomous approach of Pythagoreanism but the result of the loss of connection with the Aristoxenian tradition.

Keywords: Pythagoreanism, Aristoxenus, Autonomy-Heteronomy, Ottoman Musical Writings, Meaning in Music, Systematist School

Öz

Müziğin otonom veya heteronom bir şekilde incelenip açıklanması tarih boyunca tartışılmıştır. Bu makale, Osmanlı müziğindeki otonom-heteronom yaklaşımları Yusuf Kırşehri'nin Risale-i Musiki'sinden (1411) Haşim Bey'in Mecmuası'na (1853) kadar on üç farklı müzik yazması üzerinden tartışmayı hedefliyor. Erken dönem Osmanlılar ve onlardan önceki Müslüman filozoflar müziğin heteronom olarak incelendiği ethos ve Kürelerin Uyumu gibi Pisagorcu doktrinlerin oldukça farkındaydı. Bununla birlikte, Pisagorculuğa karşı bir çizgi olan Aristoksenosçuluğun da Müslüman filozoflar ve erken dönem Osmanlıların müzik yazmalarında çok büyük etkisi oldu. 15.yüzyıldan itibaren sayıları artan Türkçe yazmalarda Aristoksenosçuluğun otonom yaklaşımından kayma başladı. Bu makalenin argümanı bu kaymanın devam eden yüzyıllarda ve bugün bile müzik düşüncesinde Pisagorculuğun hakimiyetine sebep verdiği yönündedir. Bu durum Pisagorculuğun heteronom yaklaşımının başarısı değil Aristoksenosçu gelenekten kopmuş olmanın sonucuydu.

Anahtar Kelimeler: Pisagorculuk, Aristoksenos, Otonomi-Heteronomi, Osmanlı Müzik Yazmaları, Müzikte Anlam, Sistemci Okul

Introduction

In the last decade, the citizens of Istanbul have witnessed the rise of maqam Nihavend being used in call to prayers (adhan, ezan). Nihavend nowadays is especially used in afternoon (Asr, İkindi) and night (Isha, Yatsı) prayers which are recited from many mosques in the city. While many, as I have heard from my conversations, seem to find this practice as beautiful, relaxing and inviting there is also a controversial side to it which will become my point of departure for this article. The controversy runs as follows. One side claims that Nihavend is not suitable for call to prayers because it is a secular maqam that evokes certain secular feelings in the listener.[1] The defenders of Nihavend counter this argument by claiming that the city of Konya during Ottoman times had a tradition of reciting the call to prayer in Nihavend on Thursdays to remind everyone that the following day is Friday, which is the most important day of the week in Islam.[2]

In this debate, the argument against Nihavend exemplifies the heteronomous way of understanding music which is to evaluate it with areas outside of itself. In this particular version music can have secular or heavenly connotations. Within the traditional musical circles of Turkey and related Sufi orders, similar approaches of heteronomy shows itself in many instances. Against the heteronomous understanding, throughout history, there was also an opposite line of thought which is the musical autonomy. Autonomy aims to evaluate music in its own domain and by its own tools. Both the heteronomy and autonomy goes back to the musical ideas of ancient Greeks.[3] The definite origin of heteronomy in Turkish musical thought can be found aswell in the ideas of Greek Pythagoreans, as they connected music to numbers, "the Harmony of the Spheres", the attunement of the soul, the moral character it embodied (ethos) and so on. For Pythagoreans, it is not that music doesn't have any value on its own but its real meaning always lies outside of itself, in spheres such as astrology and numerology. Against these heteronomous ideas, Aristoxenus found for the first time an area of study that is wholly of music's own. The focus of study shifted away from astrology and numerology to musical sounds. Music could be explained by the functions and dynamics between these musical sounds.[4]

In the 19th century, the autonomous study found its most fervent formulation with Eduard Hanslick who believed that music is non-representational and if it is to have any value it is to be purely within the "tonally moving forms".[5] Music's value and meaning were found solely in itself, in its dynamic movements and relations which come to life through sound. Stravinsky shared a similar attitude: "I consider that music, by its very nature, is essentially powerless to

1 For the arguments of the debaters see Musiki Dergisi, "Nihavend makamında ezan tartışması..." (Accessed 9 November 2019); Evrensel, "Nihâvend makâmı ve ezan" (Accessed 9 November 2019).
2 Yeni Şafak, "Bu ezanı dinleyen namaza başlıyor" (Accessed 9 November 2019).
3 For an in-depth study of these ideas see Wayne D. Bowman, *Philosophical perspectives on music* (New York: Oxford University Press, 1998).
4 Bowman, *Philosophical perspectives on music,* 138: "Aristoxenus was adamant that musical theory not be permitted to 'transgress the limits of the sensible'".
5 Bowman, *Philosophical perspectives on music,* 145.

express anything at all, whether a feeling, an attitude of mind, a psychological mood, a phenomenon of nature, etc. ... Expression has never been an inherent property of music".[6] However, in some of the modern definitions of music, the remnants of heteronomy can still be seen. For Deryck Cooke, music is a language of emotions; it carries an emotional content to be evoked in the listener.[7] This tension between autonomy and heteronomy, therefore, is still relevant today for music.

In this article, I will examine the heteronomous and autonomous tendencies apparent in the Ottoman musical writings between the 15th and 19th centuries. However, at first, I will briefly explain the origins of the autonomous and heteronomous approaches. It will be shown that the Muslim scholars, inheriting the vast legacy of Greeks, adopted both of them in turn. There were two types of musical writings in the Muslim world: the systematic writings that can also be categorized as Aristoxenian and the Pythagorean-heteronomous writings. Between the 10th and the 15th centuries, the systematic writings guided the musical thought. Turkish-Ottoman musical writings inherited this approach from the previous Muslim scholars; however, in the 15th century a gradual shift from it had begun. In this century we see a new style that began to replace the systematic writings. This new style contained many Pythagorean ideas alongside verbal descriptions of maqams. Most of the Ottoman musical writings are written in this style that appreciates music heteronomously. The argument of this article is that the shift that occurred in the 15th century allowed the Pythagoreanism to dominate the musical thought in the following centuries. It is this shift that caused the later musicians to study music with the heteronomous perspective because the possibility for an autonomous music study was forgotten.

The Origins Of Heteronomous Musical Understanding

Concerning the heteronomous musical understanding, we see two concepts that left their mark over the centuries: "Ethos" and "the Harmony of the Spheres". The word ethos (ἦθος) is defined as "character" in the Greek language[8] and consequently, ethos in music is defined as attributing character to musical modes that have the power to influence the human soul.[9] If we look closely upon the arguments in the Nihavend debate we will find that they show the influence of "ethos", deliberately or not.[10] As with the Nihavend debate and in many other books,

6 Flora Levin, *Greek Reflections on the Nature of Music* (Cambridge: Cambridge University Press, 2009), 31.

7 Levin, *Greek Reflections on the Nature of Music,* 26. These definitions focus on how the listener is affected by the music, so that what the listener feels is transferred back to music as the content of music itself.

8 "Ethos. Character. Heraclitus f. 119: "ethos anthropoi daimon," "For a human being, character is destiny." Virtue ethics, whether Socratic, Aristotelian, or Stoic, is in a sense about "character"— "ethikos," as in the title of Aristotle's Nicomachean and Eudemian "Ethics," is the adjective form of the noun." Anthony Preus, "Ethos", *Historical Dictionary of Ancient Greek Philosophy* (Lanham, Md.: Scarecrow Press, 2007), 109.

9 Bowman, *Philosophical perspectives on music,* 35.

10 Some of the arguments against Nihavend are as follows: "it is a difficult maqam to Islamicize"; "Nihavend is not a heavenly maqam... it forms secular effects" see Musiki Dergisi, "Nihavend makamında ezan tartışması...". "Each maqam for each prayer time is defined... It is evident that Nihavend which is mostly used for the "song" forms would not be suitable for call to prayer. If it was suitable,

interviews, and journals, I found that the heteronomous Pythagorean influences still run deep in Turkish traditional music circles. Just as the Ottoman writings on music generally attribute the invention of music theory and maqams to Pythagoras (c.570 – c.495 B.C.) himself,[11] I won't be far off if I begin my inquiry with the Pythagorean musical conceptions.

Although there are fragmentary sources written before 300 B.C. our two main references to Pythagoreanism come from Aristotle and his pupil Aristoxenus who was "its first historian and biographer, an indispensable witness for reconstructing its historical framework".[12] Pythagoras is known to introduce "the Harmony of the Spheres" to the Greek thought.[13] While he is said to have formulated this doctrine, there is also the claim that he learned it and many other mathematical teachings from Babylon.[14] The more apparent aspect of Pythagoreanism is its kinship to the mysticist sect of Orphism and its rituals of purification.[15]

"The Harmony of the Spheres" springs from the assumption that "numbers are the ultimate things in the whole physical universe".[16] Pythagoreans proffered that when they are in motion the heavenly bodies emit a sound according to the ratios and numbers between themselves. The sound of the heavenly bodies together creates a universal harmony that nevertheless can't be heard by humans.[17] Harmony, which was constituted out of ratios and numbers, was central to the Greek thought and just as important for the human soul as for the universe. It is the harmony of the universe that became the model for the harmony of the human soul. Just as "our souls resound with the same harmonies as the cosmos",[18] change in the ratios and numbers will, in turn, affect our character.[19] Regarding numbers as the ultimate source of all things and their major point of study, Pythagoreans drifted away from the actual practice of music.[20] The ultimate reality behind the physical sound of music, which can only be apprehended by the intellect, was of more importance. The mythology of ancient Eastern cultures had begun

---

it would have been used in the traditional maqam arrangements." See Evrensel, "Nihâvend makâmı ve ezan".

11 Pythagoras is mentioned in the writings of Hızır b. Abdullah, Hızır Ağa, Mehmed Said, Gevrekzade, Mehmed Hafid Efendi, Nasır Dede and Haşim Bey which will be examined later in the article.

12 Leonid Zhmud, "Aristoxenus and the Pythagoreans", *Aristoxenus of Tarentum: Discussion*, ed. Carl A. Huffman (New Brunswick and London: Transaction Publishers, 2012), 223-249.

13 Farmer traces the origin of *ethos* theory in music to the Harmony of the Spheres. Henry George Farmer, "The Influence of Music: From Arabic Sources", *Proceedings of the Musical Association* 52nd Sess. (1925-26), 89-124.

14 "…he was brought to Babylon. Here he gladly associated with the Magi, was instructed by them in their venerable knowledge, and learnt from them the most perfect worship of the Gods. Through their assistance likewise, he arrived at the summit of arithmetic, music, and other disciplines; and after associating with them twelve years, he returned to Samos about the fifty-sixth year of his age." Thomas Taylor, *Iamblichus' Life of Pythagoras,* (London: J.M. Watkins, 1818), 9.

15 Edward A. Lippman, "The Sources and Development of the Ethical View of Music in Ancient Greece", *The Musical Quarterly*, 49/2 (April 1963), 188-209.

16 Aristotle, *Metaphysics,* trans. Hugh Lawson-Tancred (London: Penguin Books, 1998), 985b-986a.

17 Bowman, *Philosophical perspectives on music,* 63.

18 Egon Wellesz, *A History of Byzantine Music and Hymnography* (Oxford: Oxford University Press, 1961), 49.

19 Bowman, *Philosophical perspectives on music,* 25.

20 Bowman, *Philosophical perspectives on music,* 25.; Lippman, *Ethical View of Music in Ancient Greece, 191.*

to be transformed into a rationalist philosophy. With this move also the Orphic music rituals of purification were sublimated into mathematical theories.[21] It is the explanation of music through astronomy, cosmology, and numerology that make the Pythagorean understanding heteronomous. It is not that they didn't care for music's own qualities but always subordinated them to other domains:

"It appears,' I said, 'that just as the eyes are fixed on astronomy, so the ears are fixed on harmonic [enharmonios] motion, and that these two sciences are one another's sisters, as the Pythagoreans say and we agree, Glaucon. Or what do we do?'"[22]

Musical science against musical heteronomy: Aristoxenus

Aritoxenus of Tarentum (fl. 335 B.C.) is today known as the founder of the systematic musical science of Greeks. Informed by his teacher Aristotle's philosophy, he conceives music solely as a phenomenon of sound that is heard by the ear and understood by the mind.[23] With this move, Aristoxenus "breaks decisively with the mathematical harmonics of the Pythagoreans, accusing them of contradicting empirical facts".[24] Anything out of the sensible experience, such as "the Harmony of the Spheres", can't be a fundamental principle for music. The role of the intellect here stands in direct opposition to the Pythagorean thought because it is a concrete one, wholly united with the sense perception.[25] This new approach, built on the Aristotelian principles, understands music as a function of the concrete sound relations. Music had a value of study on its own and its meaning "self-evident to the musically intuitive mind".[26] Aristoxenus defied heteronomy to create a musical "logos", one that is grounded solely in music's own mechanics. It is because of his focus on the actual dynamics of music, he founded many concepts such as the function of notes (dynamis), tension-resolution (epitasis-anesis) and modulation (metabole) that we still use in modern theory.[27]

Aristoxenians were radically opposed to the idealist view of Pythagoreans, not because they completely rejected mathematics but that the actual knowledge of musicians was far more important as they were verifiable by the empirical study. Aristoxenian tradition continued into late antiquity with scholars such as Bacchius Geron, Cleonides, and Aristides Quintilianus.[28] Bacchius, being a strict Aristoxenian, believed that nothing outside of music can define anyt-

21 Lippman, "Ethical View of Music", 191: "It is quite possible that the Pythagoreans turned away more or less completely from sensory experience". Concerning Plato see Andrew Barker, *Greek Musical Writings: Volume 2, Harmonic and Acoustic Theory* (Cambridge: Cambridge University Press, 2004), 53: "…the task of his harmonics is not to analyse any musical systems in actual use."; "must seek to reveal truths of a higher order, transcending the sphere of perception".

22 Andrew Barker, *Greek Musical Writings,* 55.

23 "By the former we judge the magnitudes of the intervals, by the latter we contemplate the functions of the notes." Bowman, *Philosophical perspectives on music,* 137.

24 Zhmud, *Aristoxenus and the Pythagoreans*, 227.

25 "for we must perceive the sound that is present, and remember that which is past. In no other way can we follow the phenomena of music." Bowman, *Philosophical perspectives on music,* 137.

26 Levin, *Greek Reflections*, 49.

27 Levin, *Greek Reflections*, 53, 22, 289.

28 Levin, *Greek Reflections,* 2, 51, 56.

hing musical.[29] His focus was solely on what qualities made melody work. With Aristoxenians we have an autonomous examination of music through its own dynamics. This method is at once systematic and empirical because it creates an authentic musical logic by applying practical data to the elements of the particular musical inquiry.

The autonomy bestowed upon music meant that it cannot be translated, compared, or reduced to anything beyond itself and it also signaled the commencement of a new kind of study that would later influence many Muslim and Christian scholars. It is this approach that would culminate in the modern period with formalists such as Hanslick.[30]

The Transmission of Greek Thought

In the Middle Ages, while Western Europe had lost the connection to the Greek theory, Muslim scholars were fully immersed in it.[31] The contact with the Greek culture and theory started as early as the Umayyads and continued under the Abbasids. It is in the 8th century Baghdad that the Bayt-al Hikmah (House of Wisdom) was established as a center of astronomy and translation. Very soon the translations of the Greek writings were spread as far as Toledo, Spain. This movement of translation ignited the spark of Islamic science and philosophy.[32] Although Arabs knew some of the theories on music, such as the Harmony of the Spheres, through Egyptians, Chaldeans, and Sumerians, it is the systematic handling of theory by the Greeks that granted them "authority and acceptance within Islamic philosophy."[33] It was these translations "that schooled the Arab authors in the physical & physiological aspects of the theory of sound"[34] and later allowed for a development of a unique Islamic philosophy of music.

Al-Kindi and Ikhwan-al Safa: Heteronomous Legacy

My main inquiry from now on will be to discern the Aristoxenian and Pythagorean tendencies in the musical writings written after the 8th century in the Islamic world. Al-Kindi (c. 800–870 A.D.), also known as the first Muslim philosopher, was the one who first approached music as a science in the Islamic world.[35] In spite of his reputation as a "peripatetic",[36] in al-Kindi we find Pythagorean influences. Alongside the topics such as the composition of melody, tetrachords, sound theory, notation, and the physical qualities of oud, we find ideas about the connection between the music and the heavenly bodies, music therapy, the effects of music on

29 Levin, *Greek Reflections*, 2-3.
30 Bowman, "Music As Autonomous Form", *Philosophical perspectives on music,* 133-198.
31 Henry George Farmer, "Greek Theorists of Music in Arabic Translation", *Isis* 13/2 (Feb., 1930), 325.
32 Jozef Pacholczyk, "Music and Astronomy in the Muslim World", *Leonardo* 29/2 (1996), 145-150.
33 Jozef Pacholczyk, "Music and Astronomy in the Muslim World", 145; Also see Farmer, "The Influence of Music".
34 Farmer, "Greek Theorists", 326.
35 According to Arslan al-Kindi is not the first Muslim scholar of music, but the previous writings have not survived. Nevertheless it is with the translations of Greek works that music became an art and a science. Fazlı Arslan, İslam Medeniyetinde Musiki (İstanbul: Beyan Yayınları, 2015), 49.
36 Followers of Aristotle. Farmer, "The Influence of Music", 102.

the human soul.[37] Al-Kindi compared the four strings of "oud" to the four principal elements, used the numbers of seven and twelve in relation to the planets when arranging the notes. His musical system embraced "almost everything within the entire macrocosm".[38] For al-Kindi, philosopher has to "uncover and understand the multiple relations between the musical and the non-musical."[39]

There was no other philosopher circle than Ikhwan-al Safa (c. 9th-10th century) who propagated the Pythagorean doctrines with more rigor. Although they show the influence of Aristotle in some of their explanations, their appreciation of music is always related to topics ranging from "the Harmony of the Spheres" to music-therapy, from numerology to "ethos";[40] it is evident that Ikhwan-al Safa valued the Pythagorean heteronomy over autonomy. Pythagoreanism of Ikhwan-al Safa left its mark on the subsequent generations as the heteronomous approach had a major revival in the 15th century.[41]

The Systematic Writings

For Farmer and Arslan, al-Urmawi (d. 1294) is the pioneer of the Systematist school.[42] However, Öztürk argues that the systematic writings actually began with al-Farabi (d. 950) whose book on music was even richer than al-Urmawi.[43] If we examine the content and method of these writings, we will see that naming al-Farabi as the pioneer of the systematic tradition will be much more accurate. Thus, I will use the terms "Systematist" and "systematic" for the writings that continue this tradition.

Farmer tells that Pythagorean thought was replaced with the Aristotelian for a time when al-Farabi came on the scene.[44] One of al-Farabi's achievements was to improve upon and correct the Greek theory.[45] His method follows that for a study of music one must focus on the principles and elements that pertain to the particular musical inquiry. As a result, al-Farabi

37 Ahmet Hakkı Turabi, *el-Kindi'nin Musiki Risaleleri* (İstanbul: Marmara Üniversitesi, Sosyal Bilimler Enstitüsü, Master's Thesis, 1996), 69-99.

38 "Each note on a string of the lute had its relation to a mode, rhythm and sentiment. These, in turn, were connected with spatial spheres, geographical spheres, planets, constellations, horizon and meridian, winds, seasons, months, days, hours, elements, humours, periods of life, the faculties of the soul and body, actions, colours, perfumes, etc". Farmer, "The Influence of Music", 97.

39 Fadlou Shehadi, *Philosophies of Music in Medieval Islam* (Leiden: E.J. Brill, 1995), 8.

40 Jozef Pacholczyk, "Music and Astronomy in the Muslim World", 145-150; Also see Yalçın Çetinkaya, *İhvan-ı Safa'da Musiki Düşüncesi* (İstanbul: Marmara Üniversitesi, Sosyal Bilimler Enstitüsü, Master's Thesis, 1991).

41 For Öztürk, the Ottoman theorists who followed esoteric traditions inherited their knowledge on astrology-music from Ikhwan; Ikhwan in turn from Ptolemy; and Ptolemy from Ancient Greek esotericism. Okan Murat Öztürk, "Makam, Âvâze, Şûbe ve Terkib: Osmanlı Musiki Nazariyatında Pisagorcu "Kürelerin Uyumu / Musikisi" Anlayışının Temsili", *Rast Müzikoloji Dergisi* 2/1 (Haziran 2014), 19.

42 Henry George Farmer, *A History of Arabian Music* (London: Luzac & Co, 1929), 229. Fazlı Arslan, *Safiyüddin-i Urmevi ve Şerefiyye Risalesi* (İstanbul: Atatürk Kültür Merkezi Başkanlığı, 2017), 1.

43 Öztürk, "Kürelerin Uyumu", 12-15.

44 Farmer, "The Influence of Music", 107.

45 Arslan, İslam Medeniyetinde Musiki, 65.

gives primary importance to the actual musical phenomenon itself.[46] In a passage al-Farabi rejects the most important of the heteronomous Pythagorean doctrines, "the Harmony of the Spheres":

"What the Pythagoreans believe about the heavenly bodies and the stars, that by their motion they produce harmonious tunes—that is false. It has been outlined in the science of nature that what they claim is not possible, for the heavens, the spheres and stars cannot (lä yumkin) produce sound by their movements." [47]

For him, music was invented out of man's own natural instincts, which is at once opposed to the cosmic origins propagated by Pythagoreans, al-Kindi, and Ikhwan.[48] His *Kitab-al Kebir* focuses solely on aspects that are of music's own, such as consonance-dissonance, tetrachords, composition of melody, the causes of pitches, scales, the principles of progression, physical properties of oud, classifications of instruments etc.[49]

The systematist writings continued with the great philosopher Ibn Sina who had an interest in the Greek works so much that he is said to have revived the forgotten problems of music since antiquity.[50] He continues and improves upon the systematic understanding of al-Farabi. As with al-Farabi, Ibn Sina explicitly rejected the heteronomous connections made earlier by al-Kindi and Ikhwan:

"We shall also ignore the similarities between the heavenly bodies and human character traits (on the one hand) and the ratios of musical intervals (on the other). This is the way of those (Ikhwan-al Safa) for whom the sciences have not been distinguished the one from the other, and it has not become clear to them what is essential and what is accidental."[51]

Shehadi finds this as "a fuller declaration of independence from Pythagoreanism"[52] and "moving away in the direction of Aristoxenus".[53] As with Aristoxenus, Ibn Sina regards the science of music as the study of "principles and elements of music itself as an auditory phenomenon".[54] Thus, a composition can be meaningful only because it addresses human cognition. Ibn Sina

46 Shehadi, *Philosophies of Music in Medieval Islam*, 50.
47 Shehadi, *Philosophies of Music in Medieval Islam*, 54.
48 "Farabi's view of the origin of music is in marked contrast to the one held by Kindi and the Ikhwan. According to these, human music originated when the Sages, and in certain passages Pythagoras is singled out, heard the celestial music and set down the rules for human music. These were then disseminated to others, and eventually music spread to all. This has all the earmarks of a myth, and we do not mean that in any negative sense. By contrast what Farabi offers, to be followed by Ibn Sina along rather similar lines, is a natural or naturalistic explanation." Shehadi, *Philosophies of Music in Medieval Islam*, 59.
49 Ahmet Hakkı Turabi, "el-Musika'l-Kebir", *Türkiye Diyanet Vakfı İslâm Ansiklopedisi* (Accessed 11 November 2019). Also see Fazlı Arslan, İslam Medeniyetinde Musiki, 63.
50 İbn Sina, *Musiki*, trans. Ahmet Hakkı Turabi (İstanbul: Litera Yayıncılık, 2004), V.
51 "Thus when Ibn Sina declares the autonomy of the science of music he is thereby stating that any such extra-musical connections as may exist and may be made, would not guide us in the understanding of the essential nature of music." Shehadi, *Philosophies of Music in Medieval Islam*, 67.
52 Shehadi, *Philosophies of Music in Medieval Islam*, 9.
53 Shehadi, *Philosophies of Music in Medieval Islam*, 8.
54 Shehadi, *Philosophies of Music in Medieval Islam*, 66.

writes humans like three things about sounds, first one addressed to hearing faculty, other ones our discerning faculty in mind:

1. The qualifications of sound as sound. The first things we enjoy in music are the surface or sensible qualities of sound.

2. The similarity between music's meaningful qualifications with the natural acts of humans (al-hikayah).

3. The order or arrangement of notes and intervals into melody and rhythm (al-nidham), and the organization of these in turn into a complete composition (ta'lif).[55]

Ibn Sina even delves into the psychology of music in the part where he explains tension-resolution with an almost modern sensibility: "We like the first sound immediately when we hear it. However with the fading out of this sound we feel an excitement such that to obtain the first sound is now precious for us. The appearance of the following sound in a concord ratio to the first one compensates this break. As is known, the strongest of the sources of pleasure is the sudden feeling of something that is lost and expected. For this reason, fleeing of the sound after its sudden appearance in the mind and its compensation of the solitude created by this flight with the joy of its return in a way to please the mind is one of the greatest pleasures for the mind."[56]

In the 13th century, the Systematist school continued with Safi al-Din al-Urmawi (d. 1294) whose ideas were direct continuation of the two preceding philosophers: al-Farabi and Ibn Sina. All of his writings, in *Kitab-al Edvar* and Şerefiyye, are about the acoustics, intervals, scales, consonance-dissonance and similar topics of the musical science except for a very brief chapter in his earlier book *Kitab-al Edvar* where he explains the effect of modes on human soul (ethos) and the relevant mode for each nationality.[57] We should consider here that al-Urmawi, in his masterpiece on music Şerefiyye, does not mention anything about "ethos".[58] It is as if he went further and removed anything heteronomous from his attention.

Precisely at this point it will be useful to mention the distinction made by Fazlı Arslan concerning the two styles of musical writing in the Islamic world, namely the (systematic-Aristoxenian) style that evaluates the intervals, scales, and the physical aspects of the sound and the (Pythagorean-heteronomous) style that studies music in relation to astrology, cosmology, and ethos.[59] While al-Kindi describes the invention of instruments as an expression of the harmony of the universe,[60] al-Farabi argues that "instruments were invented to accompany and

55 İbn Sina, *Musiki*, trans. A.H. Turabi, VII.
56 İbn Sina, *Musiki*, trans. A.H. Turabi, 5-6. Translated from Turkish by the author of this article.
57 Anas Ghrab, *Commentaire Anonyme du Kitab al-Adwar Édition critique, traduction et présentation des lectures arabes de l'œuvre de Ṣafī al-Dīn al-Urmawī* (Paris: Université Paris-Sorbonne, Doctoral Thesis, 2009), 235.
58 Arslan, *Safiyüddin-i Urmevi ve Şerefiyye Risalesi*.
59 Arslan, İslam Medeniyetinde Musiki, 329-336.
60 Amnon Shiloah, *Music in the World of Islam A Socio-cultural study* (Great Britain: Scolar Press, 1995), 49-50.

enrich vocal music which had already undergone a long process of development".[61] While the Systematist school classifies the instruments empirically, Pythagoreans connect them to the harmony of the universe. This overall distinction, I believe, overlaps with the main theme of this article: autonomy-heteronomy.

The Systematist school exemplifies the autonomous study of Aristoxenus as his ideas had major influence on them. As with Aristoxenus, they study music as an end in itself. Physics and mathematics are employed for explaining the audible qualities of music. Their focus is on the music as a phenomenon in itself which excludes non-musical. Their writings include topics such as: the qualities of instruments, intervals, scales, tuning, tetrachords, rhythms, principles of composition, vibration of strings, echo of sound, sources of sound, how sound is perceived through ear, dispersion of sound through liquid and solid objects, the function of sound in animals, practical guides for performance. Another thing common to systematic writings is that they ground their theory on the musical practice of their times.[62]

The Emergence of a New Style

Farmer talks of the fall of Baghdad in 1258 as a moment of cultural ruin for the Muslim world, whereafter the Pythagorean ideas once again rose to prominence.[63] Without testing this assumption for all branches of culture, I have found that the transition to Pythagoreanism in music was not as sudden as Farmer claims, at least for the Ottomans. This can be seen from the aforementioned two styles of writing in the 15th century. The first style is the continuation of the Systematist school, based on the writings of al-Urmawi, which gradually decline in numbers. Meragi, Emir Hüsrev,[64] and Şirazi can be said to belong to this group. There are also writings based on the systematic style that also contain brief references to Pythagorean ideas, such as that of Ladikli Mehmet Çelebi, and Fethullah Şirvani. In Ladikli's *Risalet-ül Fethiyye* (1481), a treatise dedicated to Sultan Bayezid II, the content and approach is almost same with the Systematist school.[65] Nevertheless, there are brief nods to Pythagorean heteronomy such as the ethos theory for modes, appropriate modes for races, appropriate modes for the times of the day.[66] Şirvani in his treatise *Mecelletü-l fil-Musika* (which was written around 1453 and dedicated to Sultan Mehmed II), follows the systematic writings, however, he too briefly considers heteronomous ideas of "ethos" and appropriate times of performance.[67] Even though

61 Shiloah, *Music in the World of Islam,* 66.

62 Arslan, İslam Medeniyetinde Musiki, 64, 330. Also see İbn Sina, *Musiki*, trans. A.H. Turabi.; Rauf Yekta Bey, *Türk Musikisi,* trans. Orhan Nasuhioğlu (İstanbul: Pan Yayıncılık, 1986), 48.

63 Farmer, "The Influence of Music", 110.

64 Arslan, İslam Medeniyetinde Musiki, Arslan, 170. Hüsrev critizes the lack of scientific knowledge and method in Indian music of his time, he strongly advocates for a scientific method. He also criticizes the Harmony of the Spheres because it hinders the creativity of humans. Fazlı Arslan, İslam Medeniyetinde Musiki, 173.

65 Hakkı Tekin, *Ladikli Mehmet Çelebi ve er-Risaletü-l Fethiyye'si* (Niğde: Niğde Üniversitesi, Sosyal Bilimler Enstitüsü, Doctoral Thesis, 1999).

66 Tekin, *Ladikli Mehmet Çelebi,* 204-205.

67 Bayram Akdoğan, *Fethullah Şirvani ve "Mecelletün Fi'l-Musika" Adlı Eserinin XV. Yüzyıl Türk Musikisi Nazariyatındaki Yeri* (Ankara: Ankara Üniversitesi, Sosyal Bilimler Enstitüsü, Doctoral Thesis, 1996), 230-233.

these treatises show brief additions of Pythagorean heteronomy, they still are very much grounded in the tradition of the systematic school. It is evident from the content, arrangement and many verifiable references to the previous scholars (such as al-Farabi, al-Urmawi, Meragi) that these are the dynamic continuation of the systematic-autonomous writings.

The second style, which will be referred as the "new style" in the remainder of this article, is especially of interest and consist of writers such as Kırşehri, Seydi and Hızır b. Abdullah. In these writings, there is a shift with the systematic tradition alongside the emergence of extensive Pythagoreanism. These writings contain many heteronomous ideas such as the relation of modes to zodiac signs, the appropriate times of performance, the effects of maqams upon races and so on. It is this new style of musical writings in the 15th century that began the shift from the systematic-autonomous tradition. The content of the "new style" usually consists of verbal descriptions of maqams and rhythms,[68] legendary accounts, and heteronomous ideas. Öztürk draws importance to the role of esoteric-hermetic tradition in the emergence of this new style which marked a break with the Systematist school.[69] As a necessity of the esoteric-hermetic tradition, "symbolism" is highly important for these authors.[70] The numbers of four, seven, and twelve have prominent symbolic value in these writings as these are the key esoteric numbers. Musical modes are classified as four şube, seven avaze, twelve maqam. For Öztürk, this kind of classifications were not made because of purely technical properties or necessities of music, rather they originate from hermetic symbolism as musical modes are associated with twelve zodiac signs, seven planets, four elements and so on.[71] In this classification, constituents have their place this way only because they represent the elements of the cosmos. Öztürk sees this symbolic classification as a Sufi-Ottoman reflection of the Pythagorean "Harmony of the Spheres".[72] We should also note that this esoteric-hermetic tradition has its origin in the Neoplatonist (and Neopythagorean) philosophies that flourished in the 2nd century Alexandria.[73] In the Ottoman world, Suhreverdi and Ibn Arabi had a major role in the proliferation of these influences.[74]

---

68 Verbal descriptions in the new style usually indicated the tones to progress the maqam and where to rest it. This method clearly at once differs from the systematic understanding of melody in relation to calculations of intervals, tetrachords, scales, consonance-dissonance and simplifies music theory into the territory of a practical guide. "Nihâvendek oldur ki hicâz göstere, yukarudan ine, yine hicâz evinde karâr ide" Kırşehirli Yusuf bin Nizameddin, *Risâle-i Mûsıkî,* trans. Ubeydullah Sezikli, ed. Okan Murat Öztürk (Ankara: Kültür ve Turizm Bakanlığı Yayınları, 2014), 40; "Nihaventkebir: tiz-dügah hanesinde hicaz edip hüseyni hanesinden inip aşağa hicaz karar edesin" Recep Uslu, "Mehmed Said'in 1775'te Yazdığı Zeyl-i Risale-i Edvar-ı Kadızade Adlı Eserinin İncelenmesi", *Akademik Sanat* 3/5 (Summer 2018), 145; "Der Ta'rif-i Makam-ı Nihavend-i Kebir: İbtida hicaz, neva, hüseyni, acem, gerdaniye, muhayyer, sünbüle basarak ba'dehu dönüp bu üslup üzere neva'ya kadar inüb tekrar neva'dan evç, şuri yine neva, çargah, kürdi, dügah açarak rast'da kadar ider. Buna dahil alafrangada sol macur tabir iderler." Gökhan Yalçın, *19. Yüzyıl Türk Musikisinde Hâşim Bey Mecmuası* (Ankara: Atatürk Kültür Merkezi, 2016), 151.

69 Öztürk, "Kürelerin Uyumu", 2-4. See the article for an in-depth examination of the Pythagoreanism of the new style and its relation to Sufism.

70 Öztürk, "Kürelerin Uyumu", 8, 16.

71 Öztürk, "Kürelerin Uyumu", 8.

72 Öztürk, "Kürelerin Uyumu", 9.

73 Öztürk, "Kürelerin Uyumu", 8.

74 Öztürk, "Kürelerin Uyumu", 8.

With Kırşehri's treatise *Risâle-i Mûsıki* (1411), which is written in the esoteric style,[75] gone are the systematical understanding of acoustics, melody, intervals, tetrachords, scales, etc. Kırşehri's treatise consists of verbal descriptions of maqams, their circles, their alignment with zodiac signs, their appropriate times of performance, appropriate maqams for races, legendary accounts, rhythms, tunings of some instruments.[76] A story concerning the power of music is recited which has al-Urmawi as the protagonist. In the story, ulema of Baghdad forbids music. However, al-Urmawi appeals to the Caliph and offers to test the power and importance of music by leaving a camel without water for forty days. If when al-Urmawi plays music and camel leaves the water aside to listen, they would consider music as an honorable science. And this is what happens when al-Urmawi plays such beautiful music that even a camel without water for forty days is under the influence of it.[77] Kırşehri also gives a brief account of the heavenly origins of music.[78]

El-Matla (1504) of Seydi presents an interesting case. Very briefly he states the Pythagorean doctrine of "the Harmony of the Spheres", that music originates from heavenly sounds.[79] The same story of al-Urmawi and camel is also given.[80] The only part in this work about music theory is the chapter on descriptions of tunings for various instruments. The bulk of the book is rather written in verse that describes the maqams. Rather than being a theoretical book, *el-Matla* can be said to be more of a literary genre:

"Temam göster hicazı tiz yirden / Pür it agzun için avazı dürden

Vati yirden girü göster hicazı / Temam eyle bilesin bunda razı

Buna derler Nihavend anla server / Hoş izhar eyledüm kalmadı muzmer".[81]

For Öztürk, it is clear that Seydi was part of a "mystery" "fidelity" and "merit" culture based on "master-pupil" relations. Master-pupil relation and the oral transmission peculiar to this tradition constitute the core of this culture.[82] In both Kırşehri and Seydi, music is said to be created out of astrology, medicine, philosophy, and astronomy.[83] Kırşehri's book starts with legends about the creation of maqams out of zodiac signs by al-Urmawi.[84] In an anachronistic story, al-Urmawi (d. 1294) sends his pupils to meet with Ibn Sina (d. 1037).[85] Seydi also claims that

75 Kırşehirli, *Risâle-i Mûsıkî,* 13.
76 Kırşehirli, *Risâle-i Mûsıkî,* 13.
77 Kırşehirli, *Risâle-i Mûsıkî,* 18-20.
78 Kırşehirli, *Risâle-i Mûsıkî,* 17.
79 Mithat Arısoy, *Seydi'nin El-Matla Adlı Eseri Üzerine Bir Çalışma* (İstanbul: Marmara Üniversitesi, Sosyal Bilimler Enstitüsü, Master's Thesis, 1988), 20.
80 Arısoy, *El-Matla*, 21.
81 Arısoy, *El-Matla*, 47.
82 Öztürk, "Kürelerin Uyumu", 16.
83 Arısoy, *El-Matla*, 22; Kırşehirli, *Risâle-i Mûsıkî,* 20.
84 Kırşehirli, *Risâle-i Mûsıkî,* 18.
85 Kırşehirli, *Risâle-i Mûsıkî,* 60.

al-Urmawi had spiritual power and heard the heavenly sounds.[86] Fazlı Arslan regards these legendary accounts as an attempt to justify author's own (heteronomous) musical conceptions.[87]

Hızır bin Abdullah dedicated his work *Kitab-ül Edvar* (1441) to Sultan Murad II. The science of music, as written in the book, was founded by Pythagoras by hearing the sound of the stars. Pythagoras is also said to be the same person as prophet Idris.[88] The first twenty-seven chapters of his book are dedicated to astronomy, zodiac signs and their effect upon humans and maqams, the relation of signs to four elements in human body, to seasons and directions. In the twenty-eighth chapter, music is said to be both physical and spiritual.[89] Throughout the book, alongside the verbal descriptions of maqams, author is heavily concerned with heteronomous relations such as the appropriate times for performance, maqams and their relations to seasons, races, classes, cities, and their effects upon emotions. Interestingly Hızır b. Abdullah also explains topics such as how to transpose melodies by sharpening or flattening the tones.[90] According to Arslan some topics in the book such as this are directly taken from al-Urmawi. Thus, it is evident that the author also read the systematic writings.[91] However, Abdullah's book is full of Pythagorean cosmology and certainly does not understand music as a phenomenon in itself. Popescu-Judetz argues that the redundant explanations overshadow the more successful parts of the book.[92]

A common aspect of the "new style", which will also be evident in later writings, is that they use the esteemed names of al-Farabi, Ibn Sina and al-Urmawi to justify their conceptions. The stories are told about Urmawi in which he hears the heavenly sounds through his knowledge of mathematics. In another story, al-Urmawi creates out of twelve zodiac signs the twelve maqams, and out of seven stars, the seven avaze and so on. Interaction with the previous writings is the minimal condition for continuity of science. For science to develop every writer has to understand their predecessor and improve upon him. Arslan gives an example of the constant improvement put by the Systematist school: Tusi, al-Urmawi, Şirazi.[93] These scholars studied music through a scientific method so that the knowledge was constantly improved by another. Al-Urmawi, building on Tusi's findings, systematically explains almost everything regarding melody and rhythm. Şirazi invents a model for orchestral notation based on al-Urmawi's theory.[94] Even before them, Ibn Sina explains "organum" on oud about the same time Western

86 Arısoy, *El-Matla*, 20-22.
87 Arslan, İslam Medeniyetinde Musiki, 319, 331.
88 Binnaz Başar Çelik, *Hızır bin Abdullah'ın Kitabü'l-Edvar'ı ve Makamların İncelenmesi* (İstanbul: Marmara Üniversitesi, Sosyal Bilimler Enstitüsü, Doctoral Thesis, 2001), 10.
89 Çelik, *Hızır bin Abdullah*, 174.
90 Çelik, *Hızır bin Abdullah,* 11.
91 Arslan, İslam Medeniyetinde Musiki, 322.
92 Eugenia Popescu-Judetz, *Türk Musiki Kültürünün Anlamları*, trans. Bülent Aksoy (İstanbul: Pan Yayıncılık, 2007), 79. Popescu-Judetz also sees the origin of the cosmology of Hızır b. Abdullah in the writings of Ikhwan.
93 Arslan, İslam Medeniyetinde Musiki, 333.
94 Arslan, İslam Medeniyetinde Musiki, 335.

Europe invented it.[95] However, with the rise of the "new style" in the 15th century Ottoman Empire, the interaction with the autonomous-systematic tradition gradually declines. Instead of improving upon the solid theory of the Systematist school, the "new style" mythicizes these names to justify their cosmologic-esoteric ideas. References without validity, anachronisms, legendary accounts are common. Gone are the physical explanation of melody; calculations of intervals, scales, consonance-dissonance; systematic notation; acoustic theory; functional relations within melody. Arslan considers this shift as unique because in other sciences Ottomans were strongly committed to tradition.[96] It is this shift that will create a lack of a method to understand music in itself. This lack will then be filled by the heteronomous Pythagorean ideas.

The Later Ottoman Writings

Around the year 1700, Dimitri Cantemir, a prince of Romanian origin, wrote a music book called *Kitâbu İlmi'l-Mûsikî alâ Vechi'l Hurûfât* that included many notations for the compositions of his time. The first volume of Cantemir's book focuses on notation, descriptions of maqams, consonance-dissonance, rhythms. The second volume is dedicated to the notation for 355 compositions.[97] It is important to note that Cantemir devised his own notation system which helped to survive these 355 compositions to this day. Cantemir's classification of maqams can be said to be the most elaborate and rational of the musical understanding in the "new style". Cantemir consciously separated his approach from the older musical books, however, it is evident that the verbal maqam descriptions of the "new style" are still the main concern. This quality of the "new style" can be read as to indicate a practical guide for musicians. Therefore, these books do not contain, except for some parts in Cantemir, systematical musical theory but practical guides for which tones will be used and how to modulate from each maqam. The composition of melody, calculations of intervals, physical aspects of sound, how to apply dynamics, etc. these were told in detail in the systematic writings. Without these, musicians could only guess on how music works. It will be seen in the following examples of late Ottoman writings that the major books and treatises on music followed the content and approach of the "new style".

In 1760s Kemani Hızır Ağa wrote a book on music, *Tefhîmü'lmakamât fî tevlîdi'n-nagamât*, in which the maqams and rhythms are given simplistic descriptions.[98] Some tables are given in which the maqams are related to twelve zodiac signs, twelve animals, seasons, minerals, months, four elements, times of the day and various effects on the human soul. For the author, Pythagoras was a student of the prophet Suleiman.[99] In Hekimbaşı's *Mecmua* (1767), which

95 Organum is the earliest form of polyphony. İbn Sina, *Musiki*, trans. A.H. Turabi, 105-106. For Farmer, organum dates back even earlier to al-Kindi, see Henry George Farmer, *Historical Facts for the Arabian Musical Influence* (London: William Reeves, 1930), 102-112.

96 Arslan, İslam Medeniyetinde Musiki, 331.

97 Gönül Yeprem, *Dimitri Cantemir Edvarı'nın makam kavramı açısından incelenmesi* (İstanbul: Marmara Üniversitesi, Sosyal Bilimler Enstitüsü, Master's Thesis, 2007), 27-29.

98 Haluk Yücel, *Kemâni Hızır Ağa ve Tefhîmü'l-Makâmât fî Tevlîdi'n-Nağamât ve Çevirisindeki Perdelerin, Dönemi Edvârları ile Mukayesesi* (İstanbul: Haliç Üniversitesi, Sosyal Bilimler Enstitüsü, Master Project, 2012).

99 Yücel, *Kemâni Hızır Ağa*, 18.

is a kind of journal, along the usual descriptions of maqams and rhythms, ethos of maqams according to human races and times of the day are described.[100] As with the Pythagorean tradition, the relation of maqams to zodiac signs are briefly given. Mehmed Said's treatise *Zeyl-i Risale-i Edvar-ı Kadızade* (1775) begins with a Pythagorean account of the invention of music. An old musician, who can be guessed as prophet Idris or Pythagoras, hears the music of the heavens. Out of twelve zodiac signs he devises the twelve maqams, and then the seven avaze and twenty-four terkib; four şubes are also related to four elements.[101] This story and the symbolism of numbers were similarly evident in the new style writings as I have discussed, albeit the names of legendary persons were different. The author then recites the legendary story about al-Urmawi and camel, however this time, the protagonist is not al-Urmawi but al-Farabi.[102] Maqams are described simplistically, only some of the tones to be used are given for each.[103]

In 1794, Abdülbaki Nasır Dede wrote a short treatise named *Tedkik-ü Tahkik*. Similar descriptions of maqams and rhythms to the earlier writings are in this treatise.[104] However, none of the heteronomous conceptions have been given place except for a brief mention of "ethos".[105] This, of course, doesn't mean that the treatise is a rejection of the heteronomy. In the introduction of the treatise, Nasır Dede observes that at his time there were very few persons who knew the theory of musical science.[106] Pythagoras is once again mentioned as the inventor of musical science.[107]

The first self-contained treatise on music therapy, *Er-Risaletü'l Musikiyye* (1798) was written by Gevrekzade Hafız Hasan Efendi. The author refers to Pythagoras as the inventor musical melodies and rhythms, and also quotes Plato's argument against the use of music for pleasure.[108] As with the earlier writings in the "new style", Gevrekzade, falsely refers to Tusi, al-Farabi and al-Urmawi as scholars who wrote on the inextricable nature of music, astronomy, and medicine.[109] Some of the heteronomous content in his treatise is as follows:

a. Şube and its relation to the Four Elements b. Avaze and its relation to Planets c. Maqams and the illnesses that they cure d. Zodiac signs and their maqam counterparts e. Maqams in relation to skin colors f. Maqams in relation to races g. Maqams' appropriate usage in times of the day h. Maqams in relation to occupations.[110]

---

100 Erdal Kılıç, "Hekimbaşı Edvarının Sistematik Müzikoloji Açısından İncelenmesi", *Rast* 5/1 (2017), 1430-1446.
101 Uslu, "Mehmed Said", 135.
102 Uslu, "Mehmed Said", 136.
103 For example maqam Nikriz is described as "hicaz tamam ağaze edip rast hanesinde karar eder". Uslu, "Mehmed Said", 146.
104 Nâsır Abdülbaki Dede, *Tedkik-ü Tahkik*, trans. Yalçın Tura (İstanbul: Pan Yayıncılık, 2006).
105 Abdülbaki Dede, *Tedkik-ü Tahkik*, trans. Yalçın Tura, 40.
106 Abdülbaki Dede, *Tedkik-ü Tahkik*, trans. Yalçın Tura, 28.
107 Abdülbaki Dede, *Tedkik-ü Tahkik*, trans. Yalçın Tura, 30.
108 Ahmet Hakkı Turabi, *Gevrekzâde* (Amasya: Amasya Belediyesi, 2015), 96, 98.
109 Turabi, *Gevrekzâde,* 99.
110 Turabi, *Gevrekzâde,* 100-101.

A contemporary of Gevrekzade, Mehmed Hafid Efendi in his work *Ed-Dürer* (1806) also claims that Tusi, Farabi, Abdülmümin Sufi and Hace Safiyuddin[111] related music to philosophy, astronomy, astrology, and medicine.[112] As with Gevrekzade, these names are only used for the justification of author's conceptions; their real ideas, which are on the exact opposite, were probably not even in circulation at that time. The author continues by relating the twelve main maqams to twelve zodiac signs, seven avaze to seven stars, four şube to four principal elements and twenty-four maqams to twenty-four hours of the day. The author refers to a story of Pythagoras told in the treatise of Ladikli.[113] Besides the simplistic verbal descriptions of each maqam, the author explains the meaning of music with heteronomous ideas such as: the appropriate times for each mode, the effects of modes at appropriate times, the zodiac signs, modes for each skin color, modes for each race, music's therapeutic power on body and soul, each maqam's curing power for various illnesses.[114]

The 19th century is characterized by the lack of writings on music except for the musical journals.[115] Hâşim Bey wrote such journal (*Haşim Bey Mecmuası*, 1853) to compile all the knowledge on music theory. For this purpose, he compiled Nasır Dede's treatise, Nayi Mustafa Kevseri's journal, some parts from Cantemir's book and Mehmed Hafid's chapter on music. Hâşim Bey directly quoted these but mostly didn't give reference.[116] The camel story of al-Urmawi is once again recited.[117] Maqams and their correspondent zodiac signs are given, with reference to Pythagoras who is said to have invented these by observing the heavenly bodies.[118] Heterenomous ideas continue with relations to four elements, times of the day, days of the week, ethos.[119] There is an illustration (Figure 1) depicting the places of twelve maqams which has effects on human body. The explanation is given that "there is wisdom here because the soul has connection to the heavenly sphere and that it is the soul that finds pleasure in music."[120] In this concept, maqam Rast affects the eyes, while Buselik affects under the belly. There is a chart on the nature of maqams and their effects on human races with a (false) reference to al-Farabi's book.[121] Overall, Haşim Bey's mecmua can be said to be the summary of the state of music theory in the later periods of Ottomans.

111 Abdülmümin Sufi and Hace Safiyuddin are the same person but the author was far from making a critical reading.
112 Recep Uslu, *Mehmed Hafid Efendi ve Musiki* (İstanbul: Pan Yayıncılık, 2001), 23.
113 Uslu, *Mehmed Hafid Efendi,* 24.
114 Uslu, *Mehmed Hafid Efendi,* 51-55.
115 Yalçın, *Hâşim Bey*, 8.
116 Yalçın, *Hâşim Bey*, 27-99.
117 Yalçın, *Hâşim Bey*, 197-199.
118 Yalçın, *Hâşim Bey*, 189.
119 Yalçın, *Hâşim Bey*, 227-243.
120 Yalçın, *Hâşim Bey*, 229-233.
121 Yalçın, *Hâşim Bey*, 235.

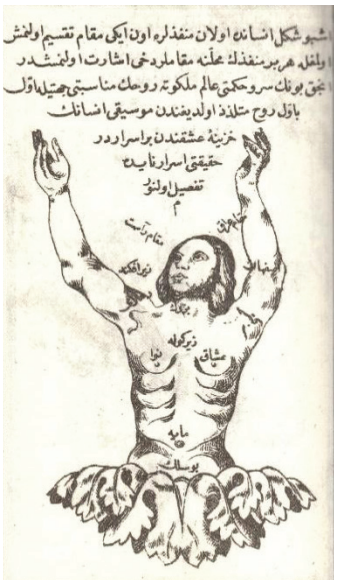

Figure 1. Illustration of Human Body and Maqams, Yalçın, *Hâşim Bey,* 228.

The State of Music Theory in the Ottoman Istanbul

When Charles Fonton, a European who stayed seven years in İstanbul (1746-1753), wrote an essay about Ottoman music, it was for the first time a European dedicated his writings solely to Ottoman music. According to Cem Behar, he was no orientalist in the classical sense rather he had the chance to know the musical milieu from inside.[122] Fonton doesn't mention anything about music theory. Cem Behar argues that this is because, in 17th and 18th centuries, music theory was in a state of regression.[123] The only reference by Fonton to any written material is the story of al-Urmawi and the camel.[124] Fonton also briefly recites "ethos" and appropriate times of maqams. Behar finds these as an example of the influence of the kind of musical books that were in circulation in the 18th century.[125] For Behar, the recitation of these shows that Fonton heard them in the atmosphere of oral tradition where legends and rumors are transmitted as historical reality.[126] Fonton tells that Ottomans believe the spheres of heaven had music, a heavenly symphony, and souls who listen to this take pleasure in it. Only the souls who could take pleasure in the heavenly symphony like music.[127] However, Fonton clearly distances himself from these views, as is evident from his saying that "Easterners can't discern reality from fairy tale".[128] The most striking part of his book is where he compares the theory of Western music to Ottoman music, that Ottomans know nothing about the accidentals, geometric and physical foundations of the nature of sounds. For this, Fonton says, "we can't expect

122 Cem Behar, *Musikiden Müziğe* (İstanbul: Yapı Kredi Yayınları, 2017), 68

123 See Behar, *Musikiden Müziğe*, 75. "Very few theory books were written between the mid 16th and late 19th centuries."

124 Behar, *Musikiden Müziğe,* 75. This story appears in many writings of the new style.

125 Behar, *Musikiden Müziğe,* 75.

126 Behar, *Musikiden Müziğe,* 76.

127 Behar, *Musikiden Müziğe,* 143.

128 Behar, *Musikiden Müziğe,* 143.

them to explain the vibration of strings, the length of string in relation to vibration, consonance-dissonance, the ratios, intervals etc".[129] Ironically, these are exactly the topics that were systematically explained and developed by the Systematist school. Fonton's essay illuminates how musical understanding shifted away from the autonomous music theory into the territory of heteronomous musical legends. Interestingly he adds that what prevents the development of Ottoman music is the lack of a notation system because what writing for science is notation for music. "What a beautiful invention is notation, think about it!... The only thing that Ottomans can rely on is memory which makes learning music much harder. Even the most expert musician knows only about hundred "peşrev" and for this he spends years besides a master."[130] Fonton's essay is also very valuable because it contributes to organology of Turkish music with detail that will not be seen again until the late 19th century.[131]

Rauf Yekta Bey (d. 1935), the first systematist music theorist to emerge after many centuries, tells that the "scientific theory of Ottoman music does not exist",[132] and because of this "some people falsely thought that Haşim Bey's mecmua was a book on music theory"[133]. He argues that "we have not even defined the scientific value of the tones we use."[134] For him, the treatises and journals on music written in the Ottoman history are full of superstitions.[135] The heated discussions between Rauf Yekta and Ahmet Mithat Efendi around the turn of the 20th century show that at that time in Istanbul there was no one except for two persons who knew about the writings of the Systematist school.[136] Rauf Yekta challenged the public to answer in a week's time his two questions on the theory of Turkish music, which were published in the newspaper "İkdam". For anyone that knew the systematic music theory it would only take fifteen minutes to solve the questions. No answer was given during that week. Rauf Yekta says that he did this to show that persons who call themselves intellectuals have very primitive knowledge of their music. Also from Ahmet Mithat Efendi's writings, we learn that some musicians were against notation, some of them were composers who opposed on the grounds that notation ruined their musical manners.[137] Arslan adds regarding this situation: "In this case, after five centuries of downfall (of music theory) how much can we expect from the society to develop science and art?"[138]

The rise of Pythagoreanism after the 15th century coincided with the fall of music theory. It was the 15th century that first saw the break with the systematical-autonomous study of music. The "new style" dropped topics such as notation, the physical explanation of sound, composition of melody, calculations of intervals, scales, consonance-dissonance and instead adopted

129 Behar, *Musikiden Müziğe,* 149.
130 Behar, *Musikiden Müziğe,* 152.
131 Behar, *Musikiden Müziğe,* 77.
132 Murat Bardakçı, *Fener Beyleri'ne Türk Şarkıları* (İstanbul: Pan Yayıncılık, 1993), 67.
133 Bardakçı, *Fener Beyleri'ne Türk Şarkıları,* 67.
134 Bardakçı, *Fener Beyleri'ne Türk Şarkıları,* 68.
135 Bardakçı, *Fener Beyleri'ne Türk Şarkıları*, 67-68.
136 Yekta, *Türk Musikisi,* trans. Orhan Nasuhioğlu, 54-56. The two persons were Ataullah Efendi who was the head of Beyoğlu Mevlevihanesi and Celaleddin Efendi who was the head of Yenikapı Mevlevihanesi.
137 Arslan, İslam Medeniyetinde Musiki, 336.
138 Arslan, İslam Medeniyetinde Musiki, 336.

simplistic verbal descriptions of maqams. When the autonomous qualities of music were forgotten, the method for elaboration on musical meaning, value, and function also disappeared. This created a lack of method for the musicians and philosophers alike. When musicians couldn't explain the properties of melody in itself, such as tension-resolution, consonance-dissonance, they had to turn to the heteronomous ideas that were in circulation. Here we should remember that Sufi orders and their penetration into the society had major role in the acceptance of the heteronomous Pythagorean ideas. "The Harmony of the Spheres" so important for Pythagoreans was transformed by Sufis into the ritual of Mevlevi Sema.[139] Just as Pythagoras was believed to heard the heavenly sounds and founded musical principles by reflecting on them,[140] Sema symbolizes the movement of the heavenly bodies and the music associated with it.[141] Even though this kind of explanations give a metaphysical satisfaction[142] to the one who seeks to understand the meaning behind music, they leave us without any empirical ground on which to understand music as a phenomenon of sound and to seek if it has a value not beyond its appearance but in the appearance itself.

Ibn Sina empirically describes in detail the many ways to progress the melody, combine tetrachords and build simple and complex rhythm for melodies.[143] In an unbridled fashion he explains the details of how to ornament a note; "Temzic (blend) is the sound you get when you hold a note on a fret, and vibrate the finger through the nearest lower and higher frets. The aim is to get a combined sound of the last note with this different sound which can either be from the same scale or not. This sometimes can be made by tuning the two strings in the same tone: to get a combined sound of two notes, one fret on a string is held by one note, and the other fret on the other string is held by the different note. This beat that belongs to temzic, is also named as teşkik (split-disrupt)".[144] In the next paragraph Ibn Sina gives an example to polyphony: "Terkib is also similar to this. Terkib is to get the desired note and with it a fourth, fifth, or in another ratio by striking the two strings simultaneously as if it occurs in same time. Tad'if is also a terkib, but it occurs in the interval of an octave".[145]

Even today, when we read Ibn Sina we get extremely detailed knowledge on the working mechanisms of music so that we would be able to compose a melody if we follow so to say the instructions. However, if we look at the verbal maqam descriptions that constitute the most of the writings in the "new style" we would only know which notes (sometimes few of them) to use for each maqam, without any sense of knowing why. The shift that began in the 15th century created a loss of connection with the immense legacy of the Systematist-Aristoxenian school. When Ottomans were deprived of the means to make sense of music in itself, heteronomous ideas could then easily get accepted. With the oral tradition so prevalent in Ottoman musical

139 Öztürk, "Kürelerin Uyumu", 27-29.
140 Öztürk, "Kürelerin Uyumu", 29.
141 Öztürk, "Kürelerin Uyumu", 29.
142 Which is more like an easy way out of scientific thought rather than seeking the inherent complex qualities of music, which we can grasp more only with the passing of time and advancement of technology.
143 İbn Sina, *Musiki*, trans. A.H. Turabi.
144 İbn Sina, *Musiki*, trans. A.H. Turabi, 105.
145 İbn Sina, *Musiki*, trans. A.H. Turabi, 106.

circles, legends, rumors, and superstitions circulated without criticism. Behar tells that rational and investigative consciousness of musical history didn't exist, instead hearsay and legends were prevalent.[146] In this atmosphere, music theory was transformed into something more like a practical guide book for musicians. In the "new style" writings that I have investigated, these are the common qualities:

They make anachronisms regarding the previous musical authors such as Ibn Sina, al-Farabi, al-Urmawi.

Their knowledge on previous authors is almost always mixed with legends and myths.

Instead of systematic music theory, there are simplistic verbal descriptions of maqams, rhythms, and sometimes practical guides for instruments.

Heteronomous Pythagorean ideas are used extensively, the meaning of music is determined from outside.

Current Examples of Heteronomy

Arslan argues that even today the traditional musical circles repeat these heteronomous ideas which actually were akin to "pop" culture.[147] This is certainly true of the authors and notable figures in the traditional musical circles. In Sadık Yiğitbaş's book on music therapy, written in 1972, many heteronomous ideas that are taken directly from the "new style" are given without a critical reading.[148] In an article written by Ruhi Kalender, heteronomous ideas are repeated in a non-critical fashion.[149] Today, remnants of "ethos" and "the Harmony of the Spheres" can especially be recognized in the Sufi thought. Ömer Tuğrul İnançer, the current head of the music-centered Sufi order "Cerrahi" says in an interview that art ise useful only in the expression of divine feelings.[150] Yet in another interview he says regarding the late musician Cinuçen Tanrıkorur that he "found that music is a reflection of the harmony of the cosmos and the macrocosmos that is mankind".[151] Türk Musikisi Araştırma ve Tanıtma Grubu, on their website, has a page on the ethos of maqams, claiming that ethos and the astrological relations are taken from al-Farabi, Ibn Sina, Ebu Bekir Râzi, Hasan Şuuri, Hekimbaşı Gevrekzade Hafız Hasan Efendi, and Haşim Bey.[152] However, as I have stated, al-Farabi and Ibn Sina explicity opposed to such heteronomous ideas.

146 Behar, *Musikiden Müziğe,* 76.
147 Arslan, İslam Medeniyetinde Musiki, 340.
148 M. Sadık Yiğitbaş, *Musiki ile Tedavi* (İstanbul: Yelken Matbaası, 1972).
149 Ruhi Kalender, "Türk Musiki'nde Kullanılan Makamların Tesirleri", *Ankara* Üniversitesi İlahiyat Fakültesi Dergisi 29 (1987), 361-375.
150 Ömer Tuğrul İnançer, *"Müzik Üzerine"* (Rıdvan Şentürk, Video Recording, 2016).
151 "Musiki ile de kalmadı, musikinin kâinatın ve büyük kâinat olan hazreti insanın ahenginin bir yansıması olduğunu buldu." Murat Salim Tokaç, "Cinuçen Tanrıkorur'u Anma Konseri", TRT Müzik (28 June 2016). Here, the term "macrocosmos" (büyük kainat) is probably used wrong by İnançer as it should be "microcosmos".
152 Türk Musikisi Araştırma ve Tanıtma Grubu (TÜMATA), "Türk müziği makamları ve insana etkileri" (Accessed 12 November 2019).

The Nihavend debate outlined in the introduction of this article is a telling example of the influence of the heteronomous ideas on the understanding of the traditional musical circles. It is at once clear that the ethos theory shows itself in this debate. Rather than focusing on the quality of the prayer (ezan) recited, which is not affected by the choice of maqam, some of the debaters thought that Nihavend is intrinsically secular. This, of course, shows that they didn't even read the Ottoman writings because there is no instance in which a maqam, let alone Nihavend, is described as secular. All of the maqams, in fact, were thought to be of heavenly in origin. If we had to measure the secularity of any maqam which properties would we need to consider? Is it the melody, the arrangement of intervals, or the harmony that makes a mode secular? Or can it be the words and the literature associated with it? I believe that melody, which constitutes the biggest part of Turkish-Ottoman music, does not mean or imply anything other than itself. Can we compose a melody and claim it has secular or heavenly content? Who would verify it? Here we have to consider the general characteristics of Islamic music, that it has an abstract content rather than concrete. Al-Faruqi certainly considers Islamic music as having an abstract content (melody) in her sharp investigation of the "Muwashshah" form. For her, "correspondence between words and music is not one in which the tune follows the poetic line programmatically... Neither is the melodic line altered to give changes of mood within a muwashshah."[153] While harmony "provides the music of Western Europe with one of its main sources of mood portrayal and programmatic effect"[154] in muwashshah the monophonic texture limits these same effects. The melody and words are not combined to portray mood and story because their relationship is rather "more metrical". Al-Faruqi also does not see any correlation between the utilization of rhythm and a particular mood. The same abstract content of melody and rhythm applies to Turkish musical forms. There are so many examples of sets of songs that use the same words but are written in a completely different arrangement of intervals and progression (maqam). The popular version of "Bir zamanlar maziye bak ne kadar şendik" is written in Hüzzam but it has two other versions written in Acem Kürdi and Hicaz. The religious counterpart of song form "ilahi" also reveals sets of songs with the same lyrics such as "Hak şerleri hayr eyler" that is written in various maqams.[155] If any song is to have a secular connotation, therefore, it should only be sought in the words or the context associated with it.

A detailed search of the Internet database of Turkish music notations[156] reveals the most popular maqams as follows: Nihavend, Hicaz, Hüzzam, Kürdilihicazkar, Rast, Uşşak. Nihavend has the most entry in this database and can certainly be called one of the most popular modes of our time. When we look at the number of musical forms it is clear that Nihavend is mostly used for the "secular" song form. Does this mean that Nihavend would be most appropriate for secular content? The answer is a certain "no", as witnessed by the number of different religious forms (Şuğul, Nefes, Durak, Tevşih, Ayin) composed in this maqam. Even the most important

153 Lois Ibsen al-Faruqi, "Muwashshaḥ: A Vocal Form in Islamic Culture", *Ethnomusicology* 19/1 (Jan., 1975), 6.

154 Al-Faruqi, "Muwashshaḥ", 7.

155 For more examples of this, see the sets of songs with lyrics written by famous poets such as Yunus Emre. İlahi form uses multiple maqams for the same lyrics more often than secular song form. If a certain mood is associated with a particular maqam, then a different maqam applied on the same lyrics would completely shatter the same mood.

156 Türk Müzik Kültürünün Hafızası, "Sanat Müziği Notaları" (Accessed 5 December 2019).

form of religious music, "Ayin" was composed twice in Nihavend. When we also include its relative maqam Buselik, the number increases even more. If the percentage of secular songs that are composed in one maqam indicates that that maqam is secular or not, then we also have to accept Hicaz, Hüzzam, Rast, and Uşşak as secular maqams as they too have the song form as their most popular utilization. These kinds of databases rather tell us that any maqam can be used for any kind of purpose. Important thing is to ask questions about why such maqam became popular during any given time.

Nihavend debate provides an example of a misguided focus. Even from a traditional perspective, maqams never were seen in the dichotomy of secular-heavenly. Thus, if someone claims today that Nihavend is secular they can't rely on the tradition. They will rather have to prove it by measuring the content (melody and rhythm) of compositions without any association with words. This, I think, will not be fruitful as the traditional usage of maqams does not allow for a concrete expression of content. Not only the limitations of monophonic texture but also the structural restrictions play a part here, such as the arrangement of verses in the song form as A-B-C-B. For example, the lower range of maqam is generally used for A section while the higher range and modulations are usually used for C section, which tells us that the words are not associated with the changing range but their application is more metrical.

This particular case is a current example of the influence of the heteronomous approach. When the autonomous qualities of music are instead considered, it can quite easily be seen that no maqam carries concrete content before their association with words. Even after the birth of a composition, it is the lyrics themselves without any alignment with the melody, that carry connotations outside of music. If a song expresses and glorifies "drunkenness", how can it be the sin of the particular arrangement of intervals when the same arrangement can also express "religious awe"? It is therefore empirically impossible to measure the so-called "secularity" of maqam Nihavend. This case rather shows us that Pythagorean heteronomous claims still influence the perspective of the traditionalists. When Ibn Sina made this assessment of the kind of thought he saw as detrimental, can we not also read it as a most lucid criticism of the understanding of today's traditional musical circles?

"They are a people with an ancient philosophy which has been inherited in its entirety and emulated by those negligent ones who have otherwise understood the instructive philosophy and the truth-seeking analysis. This distractedness brought on by emulation, a heedlessness shielded by the high esteem for the ancients, has led to the (uncritical) acceptance. This habit deflects one from the truth; it is a pliant attitude that blocks careful thought."[157]

Conclusion

Music has been studied autonomously and heteronomously throughout history. Pythagorean ideas constituted the heteronomous influence on the Muslim scholars. Autonomy on the other hand finds its origin in the ideas of Aristoxenus who also greatly influenced the the systematic writings that began with al-Farabi. Up to the 15th century, Turkish authors of musical treatises

157 Shehadi, *Philosophies of Music in Medieval Islam*, 67.

were still in touch with the systematic writings. In the 15th century, however, a new style replaced the autonomous understanding of the Systematist school. In this style, reference to the previous scholars occurs when the author wants to justify his extra-musical ideas. Simplistic verbal descriptions of maqams and rhythm replace dense systematic music theory. Coinciding with the simplification of theory we see the rise of Pythagorean heteronomy. Music is no longer considered as a science that has its own region, rather it is subordinated to the outside, to spheres such as astrology, cosmology, and numerology.

The shift from the scientific method of the Systematist-Aristoxenian school meant that the Ottoman musicians were left with nothing but the assumptions of Pythagoreanism. It is through this shift that we should examine the music theory and musical understanding of the late Ottomans. As my argument goes, it was not Pythagoreanism's success that shaped the musical understanding but the shift from the Aristoxenian tradition that allowed the heteronomous influences to be accepted. Today, the impact of this shift can still be seen in many instances, especially in the traditional musical circles. The Nihavend debate outlined in this article is a telling example of this. When approached from an autonomous side, maqam does not lend itself to any kind of interpretation contentwise. Only when we take the words into consideration we can detect connotations as the melody itself is rather abstract in Turkish-Ottoman music. Heteronomous approach however, as a remnant of "ethos", would not look into the specifications of maqam but assert certain empirically immeasurable claims. This problem is one of the direct results of the shift from the autonomous understanding of music.

Reference List

Abdülbaki Dede, Nâsır. *Tedkik-ü Tahkik*. trans. Yalçın Tura. İstanbul: Pan Yayıncılık, 2006.

Akdoğan, Bayram. *Fethullah Şirvani ve "Mecelletün Fi'l-Musika" Adlı Eserinin XV. Yüzyıl Türk Musikisi Nazariyatındaki Yeri.* Ankara: Ankara Üniversitesi, Sosyal Bilimler Enstitüsü, Doctoral Thesis, 1996.

Al-Faruqi, Lois Ibsen. "Muwashshaḥ: A Vocal Form in Islamic Culture". *Ethnomusicology* 19/1 (Jan., 1975), 1-29. https://doi.org/10.2307/849744

Arısoy, Mithat. *Seydi'nin El-Matla Adlı Eseri Üzerine Bir Çalışma.* İstanbul: Marmara Üniversitesi, Sosyal Bilimler Enstitüsü, Master's Thesis, 1988.

Aristotle. *Metaphysics.* trans. Hugh Lawson-Tancred. London: Penguin Books, 1998.

Arslan, Fazlı. İslam Medeniyetinde Musiki. İstanbul: Beyan Yayınları, 2015.

Arslan, Fazlı. *Safiyüddin-i Urmevi ve Şerefiyye Risalesi*. İstanbul: Atatürk Kültür Merkezi Başkanlığı, 2017.

Bardakçı, Murat. *Fener Beyleri'ne Türk Şarkıları.* İstanbul: Pan Yayıncılık, 1993.

Barker, Andrew. *Greek Musical Writings: Volume 2, Harmonic and Acoustic Theory.* Cambridge: Cambridge University Press, 2004.

Behar, Cem. *Musikiden Müziğe*. İstanbul: Yapı Kredi Yayınları, 2017.

Bowman, Wayne D.. *Philosophical perspectives on music.* New York: Oxford University Press, 1998.

Çelik, Binnaz Başar. *Hızır bin Abdullah'ın Kitabü'l-Edvar'ı ve Makamların İncelenmesi.* İstanbul: Marmara Üniversitesi, Sosyal Bilimler Enstitüsü, Doctoral Thesis, 2001. Retrieved from https://katalog.marmara.edu.tr/eyayin/tez/T0046900.pdf

Çetinkaya, Yalçın. *İhvan-ı Safa'da Musiki Düşüncesi.* İstanbul: Marmara Üniversitesi, Sosyal Bilimler Enstitüsü, Master's Thesis, 1991.

Evrensel. "Nihâvend makâmı ve ezan". Accessed 9 November 2019. https://www.evrensel.net/haber/94649/nihvend-makmi-ve-ezan

Farmer, Henry George. *A History of Arabian Music*. London: Luzac & Co, 1929.

Farmer, Henry George. "Greek Theorists of Music in Arabic Translation". *Isis* 13/2 (February 1930), 325-333. https://doi.org/10.1086/346459

Farmer, Henry George. *Historical Facts for the Arabian Musical Influence.* London: William Reeves, 1930. Retrieved from https://archive.org/details/historicalfactsf030523mbp

Farmer, Henry George. "The Influence of Music: From Arabic Sources". *Proceedings of the Musical Association* 52nd Sess. (1925-26), 89-124. https://doi.org/10.1093/jrma/52.1.89

Ghrab, Anas. *Commentaire Anonyme du Kitab al-Adwar Édition critique, traduction et présentation*

des lectures arabes de l'œuvre de Ṣafī al-Dīn al-Urmawī. Paris: Université Paris-Sorbonne, Doctoral Thesis, 2009. Retrieved from http://anas.ghrab.tn/static/web/fichiers/these2009.pdf

İbn Sina. *Musiki*. trans. Ahmet Hakkı Turabi. İstanbul: Litera Yayıncılık, 2004.

İnançer, Ömer Tuğrul. *"Müzik Üzerine"* (Rıdvan Şentürk, Video Recording, 2016). https://www.youtube.com/watch?v=WHjcyg5dh0M

Kalender, Ruhi. "Türk Musiki'nde Kullanılan Makamların Tesirleri". *Ankara Üniversitesi İlahiyat Fakültesi Dergisi* 29 (1987), 361-375. Retrieved from http://dergiler.ankara.edu.tr/dergiler/37/770/9801.pdf

Kılıç, Erdal. "Hekimbaşı Edvarının Sistematik Müzikoloji Açısından İncelenmesi". *Rast Müzikoloji Dergisi* 5/1 (2017), 1430-1446. Retrieved from https://rastmd.net/index.php/Rast/article/view/123

Levin, Flora R.. *Greek Reflections on the Nature of Music*. Cambridge: Cambridge University Press, 2009.

Lippman, Edward A.. "The Sources and Development of the Ethical View of Music in Ancient Greece". *The Musical Quarterly* 49/2 (April 1963). 188-209. https://doi.org/10.1093/mq/XLIX.2.188

Musiki Dergisi. "Nihavend makamında ezan tartışması...". Accessed 9 November 2019. http://www.musikidergisi.net/?p=2710

Öztürk, Okan Murat. "Makam, Âvâze, Şûbe ve Terkib: Osmanlı Musiki Nazariyatında Pisagorcu «Kürelerin Uyumu / Musikisi» Anlayışının Temsili". *Rast Müzikoloji Dergisi* 2/1 (Haziran 2014), 1-49. https://doi.org/10.12975/rastmd.2014.02.01.00019

Pacholczyk, Jozef. "Music and Astronomy in the Muslim World". *Leonardo* 29/2 (1996), 145-150. https://doi.org/10.2307/1576351

Popescu-Judetz, Eugenia. *Türk Musiki Kültürünün Anlamları*. trans. Bülent Aksoy. İstanbul: Pan Yayıncılık, 2007.

Preus, Anthony. *Historical Dictionary of Ancient Greek Philosophy*. Lanham, Md.: Scarecrow Press, 2007.

Shiloah, Amnon. *Music in the World of Islam A Socio-cultural study*. Great Britain: Scolar Press, 1995.

Taylor, Thomas. *Iamblichus' Life of Pythagoras.* London: J.M. Watkins, 1818.

Tekin, Hakkı. *Ladikli Mehmet Çelebi ve er-Risaletü-l Fethiyye'si*. Niğde: Niğde Üniversitesi, Sosyal Bilimler Enstitüsü, Doctoral Thesis, 1999.

Tokaç, Murat Salim. *"Cinuçen Tanrıkorur'u Anma Konseri"*. TRT Müzik. 28 June 2016. https://www.youtube.com/watch?v=1yfxzhHEd58

Turabi, Ahmet Hakkı. *el-Kindi'nin Musiki Risaleleri.* İstanbul: Marmara Üniversitesi, Sosyal Bilimler Enstitüsü, Master's Thesis, 1996.

Turabi, Ahmet Hakkı. "el-Musika'l-Kebir". *Türkiye Diyanet Vakfı İslâm Ansiklopedisi.* Accessed 11 November 2019. https://islamansiklopedisi.org.tr/el-musikal-kebir

Turabi, Ahmet Hakkı. *Gevrekzâde Müzikle Tedavi ve Amasya Darüşşifa Örneği*. Amasya: Amasya Belediyesi, 2015.

TÜMATA, Türk Musikisi Araştırma ve Tanıtma Grubu. "Türk müziği makamları ve insana etkileri". Accessed 12 November 2019. https://tumata.com/muzik-terapi/turk-muzigi-makamlari-ve-etkileri/

Türk Müzik Kültürünün Hafızası. "Sanat Müziği Notaları". Accessed 5 December 2019. http://www.sanatmuziginotalari.com/default.asp

Uslu, Recep. *Mehmed Hafid Efendi ve Musiki*. İstanbul: Pan Yayıncılık, 2001.

Uslu, Recep. "Mehmed Said'in 1775'te Yazdığı Zeyl-i Risale-i Edvar-ı Kadızade Adlı Eserinin İncelenmesi". *Akademik Sanat* 3/5 (Summer 2018), 128-153. Retrieved from https://dergipark.org.tr/en/pub/akademiksanat/issue/37684/19355

Yalçın, Gökhan. *19. Yüzyıl Türk Musikisinde Hâşim Bey Mecmuası*. Ankara: Atatürk Kültür Merkezi, 2016.

Yeni Şafak. "Bu ezanı dinleyen namaza başlıyor". Accessed 9 November 2019. https://www.yenisafak.com/yenisafakpazar/bu-ezani-dinleyen-namaza-basliyor-357302

Yeprem, Gönül. *Dimitri Cantemir Edvarı'nın makam kavramı açısından incelenmesi.* İstanbul: Marmara Üniversitesi, Sosyal Bilimler Enstitüsü, Master's Thesis, 2007.

Yiğitbaş, M. Sadık. *Musiki ile Tedavi.* İstanbul: Yelken Matbaası, 1972.

Yusuf bin Nizameddin, Kırşehirli. *Risâle-i Mûsıkî.* trans. Ubeydullah Sezikli. ed. Okan Murat Öztürk. Ankara: Kültür ve Turizm Bakanlığı Yayınları, 2014.

Yücel, Haluk. *Kemâni Hızır Ağa ve Tefhîmü'l-Makâmât fî Tevlidi'n-Nağamât ve Çevirisindeki Perdelerin, Dönemi Edvârları ile Mukayesesi.* İstanbul: Haliç Üniversitesi, Sosyal Bilimler Enstitüsü, Master's Project, 2012. http://earsiv.halic.edu.tr/xmlui/handle/20.500.12473/968

Wellesz, Egon. *A History of Byzantine Music and Hymnography.* Oxford: Oxford University Press, 1961.

Zhmud, Leonid. "Aristoxenus and the Pythagoreans". *Aristoxenus of Tarentum: Discussion*. ed. Carl A. Huffman. 223-249. New Brunswick and London: Transaction Publishers, 2012.

Further Reading

Godwin, Joscelyn. *The Harmony of the Spheres A Sourcebook of the Pythagorean Tradition in Music*. Vermont: Inner Traditions International, 1993.

Hanslick, Eduard. *The Beautiful in Music*. trans. Gustav Cohen. London: Novello, 1891.

Macran, Henry S.. *The Harmonics of Aristoxenus*. Oxford: Clarendon Press, 1902.

Scruton, Roger. "Analytical Philosophy and the Meaning of Music". *The Journal of Aesthetics and Art Criticism*, 46, Analytic Aesthetics (1987), 169-176.