# A LOOK AT THE INDO-EUROPEAN ARCH RHYTHMICS
## (a comparative analysis of the musical rhythmics of Hindus, Arabs, Greeks, and Balts)

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*This article analyzes and compares the rhythmics of Indian, Arabian, ancient Greek, ethnic Lithuanian, Latvian, and Estonian music. The stress is laid on the similarity common to classical Indian, ancient Greek, and ethnic Lithuanian music. The author poses the question: can the durational rhythmics, which is common among the mentioned cultures, be called "Indo-European Arch rhythmics", or is it a phenomenon of a wider scale, typical in the music of other cultures, too. The research is based on typological and comparative methods. The phenomenon of musical rhythmics is analyzed following the quantitative (duration, quantity) view. The foundation of quantitative (durational) rhythmics is sought for in languages as well – in the fluctuation of long and short syllables.*

The understanding of musical rhythm is based on durational and dynamic relations of music sounds. These two points, psychologically important aspects for understanding, become the main criterion for classifying rhythmic phenomenon met in the music of different time periods and different cultures. The phenomenon of rhythmics is divided into quantitative (durational) and qualitative (stressed), which is done based on the domination of a certain aspect. [1] The quantitative (durational) rhythmics is genetically related to language and originates most of the time from the fluctuation of long and short syllables, whereas the qualitative (stressed) rhythm obviously relates to the function of movement. The principal difference and relation of durational and stressed rhythmics with word and movement was already noticed by the members of the ancient world. The Roman orator, Fabius Quintilius, in his work dedicated to his art of rhetoric, "Institutio Oratoria" (IX, IV), states: *"Metrum in verbis modo, rhytmus etiam in corporis motu est" ("The metre is only in words, but the rhythm – in body movement").* [2]

Upon analyzing old Lithuanian folk songs, it can be noted that the rhythmics (especially calendar and work songs) is quite different compared to the rhythmics of classical European

[1] Cf. A. Чекановска, *Музыкальная этнография. Методология и методика,* Москва, 1983, p. 110; P. Султанова, *О взаимосвязях усуля и ритма мелодии в вокальных частях шашмакома,* Ташкент, 1998, p. 4–6; B. H. Холопова, *Музыкальный ритм,* Москва, 1980, p. 6.

[2] Quoted by C. Sachs, *Die Musik der Alten Welt,* Berlin: Akademie–Verlag, 1988, p. 167.

and pop music. The melodies of old Lithuanian folk songs are very hard to group into beats. Examples of the mixed (5/8, 7/8) and changing metre can be found here. Obviously, the rhythmics of the oldest set of songs is controlled by a different consistency than we are used to. The music is more similar to ancient Greek music and Indian Vedic singing, but not to the rhythm of classical European ($17^{th}$–$20^{th}$ c. A.D.) or pop music. Despite the fact the roots of European classical music ($17^{th}$–$20^{th}$ c. A.D.) come from ancient Greek music, the rhythmics of European professional music had taken a different direction. A long, lasting period of rhythmic uncertainty (Gregorian chant, $4^{th}$–$12^{th}$ c. A.D.) was followed by the period of modal rhythmics (early polyphonic, $12^{th}$–$13^{th}$ c. A.D.). The modal rhythmics gradually changed to the graduate rhythmics ($13^{th}$–$16^{th}$ c. A.D.). In $17^{th}$ c. A.D. a meaningful turning point took place: durational relations were changed by stressed ones. At the same time the system of note writing was formed and the instrumental music of the baroque era flourished. Meanwhile, the old sets of European ethnic music kept the features of the old quantitative rhythmics. This can be said not only about North European (Lithuanian, Latvian, and Estonian) but also about Southeast European (Croatian, Albanian, Macedonian, Bulgarian, and Greek) ethnic music.

Jadvyga Čiurlionytė (1899–1992), a Lithuanian ethnomusicologist, once said that the songs of the Lithuanian rye harvesting sound similar to the chant of Indian Vedas. The similarity of the sound is determined by the affinity of Lithuanian songs, ancient Greek music, and the chant of Indian Vedas. All three examples belong to the type of durational (quantitative) rhythmics. Is this similarity accidental or it is caused by genetic relationship? In order to answer the question we will analyze several significant examples of quantitative rhythms: the chant of Indian Vedas, which influenced the development of Indian classical music, the rhythms of Arabian classical music (*īqā 'āt*), the rhythmics of ancient Greek, the rhythmics of Lithuanian, Latvian, and Estonian ethnic music.

## The rhythmics of Indian music

Sanskrit poetry, together with the singing of the Vedic hymns, which is one of the oldest phenomenon of Indian musical culture known today, is reputed to be one of the strongest examples of quantitative versification. Thanks to oral transmission and strict traditions of teaching, the singing of the several millenniums old Vedas reached our times unchanged. The oldest Veda, *Rgveda*, is chanted in three tunes. One of them is tonic (*svarita*), the second one enriches the singing with the tone from above (*udātta*), and the third one enriches it with the tone from the bottom (*anudātta*). This way of singing, described in the grammar of Panini[3] in the $4^{th}$ century B.C., had, most likely, existed even earlier. The duration of the Rig-Veda's musical sounds is dependent on the phonetic consistency of the Sanskrit language and based on the natural rhythm of words.[4] The long vowels and diphthongs are sung in long notes and the short ones – in short notes. Quantitative relationship of Sanskrit syllables is more

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[3] C. Sachs, *Die Musik der Alten Welt*, Berlin: Akademie–Verlag, 1988, p. 143.
[4] *Ibid.*, p. 143.

important than dynamic ones. Short and long vowels carry a meaningful function in the Sanskrit language, which makes it very close to the old Greek and Lithuanian languages. The sound of the Vedic hymns is reminiscent of ancient Greek music as well as Lithuanian songs of rye harvesting. Below is an example from Taitiria Upanishads (*taittirīyopaniṣad*):



*śam no mit - rah̩, śam va - ru -ṇah̩     śam no bha - vat - var - ya - mā.*

*śam na in - dro br -has - pa - tih̩     śam no viṣ - ṇu -ru - ruk - ra -mah̩.*

The biggest part of Vedic literature was poetic and it was chanted strictly following the rules of poetic metrics of Sanskrit and taking into consideration the related length of vowels. The study of Sanskrit poetic metrics has a long tradition as an important branch of Vedic learning. The text that deals with the rules of metrics is called the *Chandaśāstra* and is one of the six *Vedāṅgas* or limbs of the *Vedas*. The first book known to us as the one that analyzes the mentioned rules is thought to have been written ca. 150 B.C. by Pingalācārya.[5] The principles and the classification of the composition of *chanda* are found in the old Hindu texts. According to the "History of Indian Literature," the *Sānkhyāyana Śrautasūtra*, contains several chapters on prosody. Other Sanskrit texts dealing with prosody or metrics mentioned are *Ṛgveda Prātiśākhya*, Kātyāyana's *Anukramaṇis* and *Nidāna Sūtra* related to *Sāmaveda*.[6] Apart from these, chapters 14, 15 and 32 of Bharata's *Naṭyaśāstra* and chapters 328-335 of *Agnipurāṇa* also deal with metrics. During hundreds of years many famous treatises describing the consistency of versification were written. *Ṛtabodha* of Kālidāsa (2nd cent. A.D.), *Suvṛttatilaka* of Kṣemendra (11th cent. A.D.), *Chandomañjarī* of Gangā Dāsa (12th cent. A.D.), and *Vṛttaratnākara* of Kedāra Bhaṭṭa (15th cent. A.D.) are important among the later works on metrics.[7]

The rhythmic foundation of Sanskrit prosody is made of stable metric cycles called *chanda*. Every *chanda* is determined by the arrangement of short and long syllables (skr. *akṣara*). Short syllables are the ones that end with a short vowel, long ones are the ones ending with a long vowel or a diphthong and also those which go before the double consonants. The short syllables are called *laghu* and the long ones – *guru*. A large number of

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[5] M. Winternitz, *History of Indian Literature*, vol. 3 (reprint ed.), Delhi: Motilal Banarsidass, 1999, p. 32.

[6] *Ibid.*, vol. 3, p. 31; vol. 1, p. 269.

[7] Mishra Sampadananda, *A Handbook of Sanskrit Prosody*, Pondicherry: Sri Aurobindo Society, 1999, p. 4.

possible permutations and combinations has given rise to a large variety of *chandas*. This means that Vedic metres are not of a qualitative (dynamic) nature but of quantitative (durational) one.[8] The unit of metric quantity is called *mātrā* and it matches *mora* used in European poetry (in ancient Greek *Chrónos prótos*). The long syllable (*guru*) is two *mātrās* long and the short syllable (*laghu*) lasts only one. There are two kinds of Sanskrit metres. The first ones are syllabic metres *vrtta*, that have a defined number of syllables. The second ones are metric metres *jāti* and they have a defined number of *mātrās*. Those metres that have a particular number of syllables are divided into equal (*samvrtta*), half equal (*ardhasamvrtta*), and unequal (*visamavrtta*) metres. Every line of syllabic metres is divided into groups of three syllables (three-syllabic feet (*gana*)), which differ from one another in the order in which the durations are put. There are only eight three-syllabic feet; however, two monosyllabic feet are used in addition to the three-syllabic[9]:

| | |
|---|---|
| *La gana* ∪ | *Gā gana* – |
| *Na gana* ∪∪∪ | *Mā gana* – – – |
| *Ya gana* ∪ – – | *Bhā gana* – ∪∪ |
| *Rā gana* – ∪ – | *Ja gana* ∪ – ∪ |
| *Tā gana* – – ∪ | *Sa gana* ∪∪ – |

Hindu people produced a spectacular artificial word *yamātārājabhānasalagām*, which became a tool helping to classify and remember the names of the feet. Every first syllable of the three-syllabic feet indicates the name of certain feet: *yamātā* ∪ – –, *mātārā* – – –, *tārāja* – – ∪, *rājabā* – ∪ –, *jabhāna* ∪ – ∪, *bhānasa* – ∪∪, *nasala* ∪∪∪, *salagām* ∪∪ –.[10]

When metric feet *(gana's)* are connected according to a certain order, they make complicated quantitative metres called *chandas*. There are seven main *chandas* that are most often used in the Vedas, the oldest record of Hindu literature: *gāyatrī* (24 syllables), *usnik* (28 syllables), *anustup* (32 syllables), *brhatī* (36 syllables), *pan.ktih* (40 syllables), *tristup* (44 syllables), and *jagatī* (48 syllables). Apart from these, we also get references about seven more metres used in the *Vedas*. They are: *Atijagatī* (52 syllables), *Śakvarī* (56 syllables), *Atiśakvarī* (60 syllables), *Astih* (64 syllables), *Atyastih* (68 syllables), *Dhrtih* (72 syllables), *Atishrtih* (76 syllables). Maharishi Valmikis has used thirteen different *chandas* in *Rāmāyana*, a mythological epic poem. However, Maharishi Vyāsa has used even eighteen different

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[8]Arnold E. Vernon, a famous researcher of the development of Vedic metres, stresses the durational nature of Vedic metres. According to the scholar, "The metrical laws of the Rigveda recognize only the distinction between long and short vowel or a short vowel followed by two consonants". Cf. Arnold E. Vernon, *Vedic Metre in this Historical Development*, Dehli, Varansasi, Patna: Motilal Banarsidass, 1967, p. 108.

[9] Sampadananda Mishra, *A Handbook of Sanskrit Prosody*, Pondicherry: Sri Aurobindo Society, 1999, p. 15–16; also see C. Sachs, *Die Musik der Alten Welt*, Berlin: Akademie-Verlag, 1988, p. 167–168.

[10] C. Sachs, *op. cit.*, p. 167–168.

*chandas* in the great Hindu epic poem, *Mahābhārata.* [11] Sampadananda Mishra in his book, "A Handbook of Sanskrit Prosody," gives the most popular examples of Sanskrit *chandas*.

*Chandas* consisting of 11 syllables:

| | |
|---|---|
| *Indavajrā* | – – ∪ – – ∪ ∪ – ∪ – – |
| *Upendravajrā* | ∪ – ∪ – – ∪ ∪ – ∪ – – |
| *Śalinī* | – – – – – ∪ – – ∪ – – |
| *Rathoddhatā* | – ∪ – ∪ ∪ ∪ – ∪ – ∪ – |

*Chandas* consisting of 12 syllables:

| | |
|---|---|
| *Vamśasthavilam* | ∪ – ∪ – – ∪ ∪ – ∪ – ∪ – |
| *Bhujangaprayātam* | ∪ – – ∪ – – ∪ – – ∪ – – |
| *Totakam* | ∪ ∪ – ∪ ∪ – ∪ ∪ – ∪ ∪ – |

*Chandas* consisting of 13 syllables:

| | |
|---|---|
| *Pragarṣinī* | – – – ∪ ∪ ∪ ∪ – ∪ – ∪ – – |

*Chandas* consisting of 14 syllables:

| | |
|---|---|
| *Vasantatilakam* | – – ∪ – ∪ ∪ ∪ – ∪ ∪ – ∪ – – |

*Chandas* consisting of 15 syllables:

| | |
|---|---|
| *Mālinī* | ∪ ∪ ∪ ∪ ∪ ∪ – – – ∪ – – ∪ – – |

etc.

To express or describe any experience, feeling, emotion or action, the choice of the appropriate *chanda* is very important, because each metre has its own movement and mood. Sometimes the name of the *chanda* gives a clue to its movement. For example, *Mandākrāntā* means 'slow moving'. Most of syllables are long and heavy, which is ideal for expressing pathos. Similarly, *Tvarigati* means 'fast gait' and contains many short syllables. At the time, the names of the *chandas* are derived from nature. For example, *Bhujañgaprayata* is named after the serpent and its rhythm has a zigzag movement. Twelve syllables of four *Ya* groups form each *pāda* of this metre. So, here the 1st, 4th, 7th and 10th syllables of each *pāda* are short and the others are long:

∪ – – ∪ – – ∪ – – ∪ – –

Shankaracharya has written his *Bhavānyaṣṭakam* in this metre:

> *na tāto na mātā na bandhur na dātā*
> > *na puttro na puttrī na bhṛtyo na bhartā* |
> *na jāyā na vidyā na vṛttirmamaiva*
> > *gatistvam gatistvam tvamekā bhavāni* ||

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[11] Sampadananda Mishra, *op. cit.*, p. 5–6.

These are some interesting insights into Sanskrit metres but there is no easy and fast rule to be followed. The same *chanda* is often used to depict different moods, and different *chandas* can express the same mood. Everything depends on the inspiration and the mastery of the poet.[12]

The hindus derive their classical music from *Sāmavedas;*[13] which is the sung version of *Rgveda.*[14] Therefore, it is obvious that the rules of Vedic chant were influencing the formation of the rhythms of Indian classical music. According to the musicologist Alain Daniélou, *"musical theory and the theory of language in India were considered by the Sanskrit theorists as two parallel branches of one general science of sound. Both have often been codified by the same writers. The names of Vashishtha, Yajnavalkya, Nārada, Kashyapa, Pānini, are mentioned among the early musicologist-grammarians."*[15] There is an obvious relationship between the quantitative nature of the old cycles of rhythm (*tāla*) and phonetics of Sanskrit. The fluctuation of different duration of *tala* constructions is as important as the number or the grouping of metric parts (*mātrā*). The organization of rhythm according to the different sound durations can be connected with the Sanskrit language and can be derived from the rhythm of Vedic chant, where the highlighting of long and short syllables is very important. Indian musicians acknowledge the fact that the phonetic consistencies in the Sanskrit language made an influence on the rhythm of Indian classical music. According to Ravi Shankar, *"one can find the origins of Indian rhythms in the language, poetry, and literature of the country. Even until modern times, students learned their lessons by memorizing them in verse. The Sanskrit language and the numerous dialects derived from it classify syllables according to their temporal duration. The rules of versification are highly complex and very strict, and the time length (as opposed to, say, accent in the West) is of prime importance in poetry."*[16]

It is not difficult to reconstruct the development of Indian rhythmics, because there are many musicological texts left, which analyze the questions of rhythmics.[17] *Gītālamkara*[18], known as the oldest Indian musicological treatise, is assigned to Bharata, the legendary wise man. Alongside the questions of other musicological aesthetics and theories, in his writing the author analyzes the problems of the rhythm. After becoming familiar with the problems of the rhythm in the treatise, it becomes obvious that most attention is paid to duration of sounds. In

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[12] Sampadananda Mishra, *op. cit.*, p. viii–xi, 105.

[13] *Ālāp. A Discovery of Indian Clasical Music*, Pondicherry, 1995, p. 11.

[14] B. C. Deva, *Indian Music*, New Dehli, 1974, p. 8.

[15] Alain Daniélou, *The Rāgā-s of Northen Indian Music*, London: Berrie and Rockliff, 1968, p. 3–4.

[16] Ravi Shankar, *My Music, My Life*, New York: Simon and Schuster, 1968, p. 29.

[17] One such attempt was made by E. Velička, "*Tāla*: the peculiarities of the rhythmic of Hindu classical music", *Acta Orientalia Vilnensia* 2 (2001), Vilniaus universiteto leidykla, 2002, p. 164–177.

[18] A. Danielou dates it back to 3rd B.C.; see: A. Danielou, *Einführung in die indische Musik*, Wilhelmshaven, 1975, p. 21; also see "Gytalamkara", *Estetikos istorija: antologija*, t. 1: Senovės Rytai. Antika, sud. A. Andrijauskas, Vilnius: Pradai, 1999, p. 229–239.

*Gītālamkara* the rhythm is examined according to the quantitative aspect.[19] The eleventh chapter of *Gītālamkara* talks about the definition of the rhythm called *yati*.[20] Three cycles of the rhythm are proposed (accordingly of 4, 3, 5 parts of metric duration), which are described using the terms of poetic rhythmics (*Gopūchha, Vajrasara* ir *Mahabhairava*).[21] In the 13th century A.D. the united musical tradition of India split into two, completely independent, musical systems – *Hindusthānī* and *Karṇāṭaka*.[22] It had its reflection in the rhythmics, too. Purandaradasa (1484–1564)[23], the patriarch of classical music in Southern India, wrote about the system of seven *tala* (*suladi saptatāla*), which had formed in the music of South India (*Karṇāṭaka*). Today, about three fourths of the modern music of *Karṇāṭaka* is based on this rhythm system. Tālas of *Karṇāṭaka* are based on different durations, for example *Eka* (–), *Rupaka* (∪ –), *Triputa* (– ∪ ∪), *Matya* (– ∪ –), *Jhampa* (– ~ ∪), *Ata* (– – ∪ ∪), and *Dhruva* (– ∪ – –). South Indian *tālas* are constructed of the three kinds of sound durations – *angas* (*laghu, drutam* and *anudrutam*), which have an obvious relation with the old Indian metric. Every one of these *talas* can have five different modifications, if we change the proportion of long (*laghu*) and short (*drutam*) value in them. It should be noted that *anudrutam* and *drutam* have fixed values (anudrutam has 1 *akśara*, drutam has 2 *akśaras*, or units of time), but not the *laghu* which has five different measures. Depending on the number of units, *laghu* gets the adjectival suffixes which show the number of *aksaras* in it: *tisra lahgu* (3), *chaturasra laghu* (4), *khanda laghu* (5), *misra laghu* (7) and *sahkīrna laghu*. Changing the proportion of long (*lahgu*) and short (*guru*) durations (3:2, 4:2, 5:2, 7:2, 9:2), it is possible to make even 35 different *tālas*.[24] However, in the music of North India (*Hindusthānī*) *tālas* are made by grouping a certain number of *mātras*. The rhythmics of South and North India cannot be imagined without a particular mnemonic system, which is based on certain syllables called *bol*. The syllables have to be learned by heart as then it becomes easier for the percussionist to

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[19] Chapter eight of the treatise is called "The Definition of Mātra". It talks about the duration of musical sounds (*svāra*) using poetic comparisons. Musical sounds are divided into short, long, and extended, they are also compared with the sounds of different birds (crane, cuckoo), their suitability for different musical characters and emotions is being discussed; also see: Бхарата, «Гиталанкара», *Музыкальная эстетика стран Востока*, ред. В. П. Шестаков, Москва, 1967, p. 93; also see: Bharata, *Le Gītālamkāra. L'ouvrage originale de Bharata sur la musique*, ed. par A. Daniélou et N. R. Bhatt, Pondichérry, 1959.

[20] In later treatises the concept of *yati* defines the movement, the character of the movement, however, in *Gītālamkara* it means the rhythm.

[21] *Gopūchha*: ∪∪∪∪ arba – – – –; *Vajrasara* –∪∪–; *Mahabhairava* –∪∪∪; see: Бхарата, «*Гиталанкара*», *Музыкальная эстетика стран Востока*, ред. В. П. Шестаков, Москва, 1967, p. 94.

[22] This was determined by historical circumstances: The Islamization of Northen India and the establishment of the Mongol empire.

[23] B. C. Deva, *Indian Music*, New Dehli, 1974, p. 40.

[24] See: B. C. Deva, *Indian Music*, New Delhi, 1995, p. 39; *Ālāp. A Discovery of Indian Clasical Music*, Pondicherry, 1995, p. 238; Srini Pichumani, *Suladi Sapta Taala System*: http://www.aoc.vt.edu/~boppe/MUSIC/PRIMERS/cperc.html.

remember especially complex figures of the rhythm.[25] For example: *Dādrā* (6 strikes, divided 3+3) – *dhi dhi na dha tu na*; *Rūpaka* (7 strikes, grouped like this 3+2+2) – *tin tin na dhin na dhin na*; *Jhaptāla* (10 strikes, grouped like this 2+3+2+3) – *dhi na dhi dhi na ti na dhi dhi na*, and etc.

Hindu *tāla* is one of the most delicate and most complicated of all classical rhythmic systems. Despite its external similarity to the measures used in European music, it is obvious that *tālas* have a quantitative nature. This can be proved by analyzing old musicological Indian treatises (eg. *Nātyaśāstra*[26]) and the historical development of Tāla. The fluctuation of sound duration is as important in the organization of Tāla as the number of *mātras*. The importance of fluctuation of durations, as the principle of organization of the rhythmics, goes back to the times of *Rgveda* and is connected with the peculiarities of the Sanskrit language (there are some analogies with poetic rhythm of old Greek, with the modal rhythm of European Middle Ages, with the old Lithuanian calendar and work songs, also a few songs related to children). The existence of the system of syllabic mnemonics (*bol*[27] ir *theka*[28]) also testifies to the relationship with the language. Indian music varied strongly through history, causing the variation in rhythmics as well. It was affected by historical circumstances and by the influence of the neighboring cultures. *Karnātaka* preserved a larger amount of features of the old Indian music; *hindusthānī* was influenced quite a bit by Arab and Persian music. The cycles of the rhythm of the North Indian classical music are more similar to our measures. Their quantitative nature and the relationship with the old Sanskrit language is not that obvious any more, however, it is not disappearing. According to a musicologist, Alain Danielou, who is one of the most famous researchers of Indian classical music, *"The structure of Indian music is very similar to the language. The old grammarians and theoreticians of Sanskrit believed that the separation of verbal language, gestures, and music was the phenomenon, which developed only later and was never fully implemented. In fact the verbal and musical languages are the two aspects of the same phenomenon of communication, which have common psychological, physiological, and semantic foundations. The fact that more abstract conventional structures developed in particular musical systems, can hide this foundational unity, however, it would be only a show."*[29]

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[25] *Ālāp, A Discovery of Indian Clasical Music*, Pondicherry, 1995, p. 141–144.

[26] The reconstruction of the old tālas, described in *Nātyaśāstra*, was proposed by Emmie te Nijenhuis; see.: Emmie te Nijenhuis, "Die Musik im altindischen Theater nach dem Nātyaśāstra", Walter Kaufmann, *Altindien,* Leipzig, 1981, p. 194–195; t. p.: A. Danielou, *Einführung in die indische Musik*, Wilhelmshaven, 1975, p. 76.

[27] One of the meaning of *Bol*concept – the syllabic mnemonics of tāla, where certain syllables are used (eg. *dha dhin dhin dha*); see: R. Menon Raghava, *The Penguin Dictionary of Indian Classical Music*, New Delhi, 1995, p. 28.

[28] *Theka* is a mnemonic structure of tāla cycle; see: R. Menon Raghava, *The Penguin Dictionary of Indian Classical Music*, New Delhi, 1995, p. 162.

[29] A. Danielou, *Einführung in die indishe Musik*, Wilhelmshaven, 1975, p. 13.
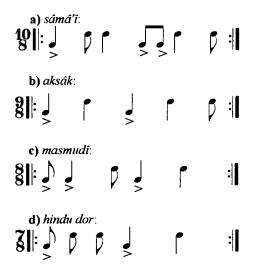
## Arabian, Persian, and Turkish rhythmics

The music of the Near and Middle East (Arabian, Persian, and Turkish) also has many examples of quantitative rhythmics. The science of rhythmics of the Eastern people has very old and profound traditions. Questions concerning classical versification and rhythmics were already thoroughly ventilated in the first Arabian, Persian, and Middle Asian musicological treatises. Arabian philosophers, the authors of treatises written in the Middle Ages,[30] wanted to find and motivate the consistency of musical rhythm, which was determined by the norms of classical Arabic versification (*'arūḍ*). Arabian system of classical versification was thought to be the Semitic example of quantitative rhythmics, which influenced not only the classical Arabian but the rhythmics of Persian and Turkish music as well. Arabian versification is based on the rules used for long and short vowels. It is interesting that throughout the time, Turkic languages speaking nations (Turks, Azerbaijanis, and Uzbeks) applied classical Arabic versification (*'arūḍ*) to their own, despite the fact that syllabic versification used to be more common to the old folk poetry of those people rather than the metric one.

After analyzing the typical rhythm model of Arabian classical music (arab. *īqā'*, plural *īqā'āt*), it becomes clear that they have a double nature – durational (quantitative) and dynamic (qualitative) at the same time. The quantitative side of the structure is created by the constant change of the short and long rhythmic values. However, the qualitative side is created with the help of dynamic differentiation of rhythmic units; the fluctuation of the strong ("dum") and the weak ("tak") sounds, which is stressed much more by timbre than by stress.[31] Still, quantitative, i.e. durational, aspect of the rhythm is more important. The fluctuation of short and long values is exactly the thing that creates a relief of the rhythmic picture. Below are a few examples of the most typical rhythmic systems of Arabian classical music:

a) *sāmā'ī* (matches the metre of 10/8: $- \cup - \cup \cup - \cup$, stressed are the $1^{st}$, $6^{th}$, and the $7^{th}$ metric parts);

b) *aksāk* (matches the metre of 9/8: $- - - - \cup$, stressed are the $1^{st}$ and the $5^{th}$ metric parts);

c) *masmudī* (matches the metre of 8/8: $\cup - \cup - -$, stressed are the $1^{st}$, $2^{nd}$, and the $5^{th}$, sometimes the $1^{st}$, $4^{th}$, and the $5^{th}$ metric parts);

d) *hindu dor* (matches the metre of 7/8: $\cup \cup \cup - -$, stressed are the $1^{st}$ and the $4^{th}$ metric parts), etc.

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[30] Ya'qūb ibn Isḥāk al-Kindī (ca. 801–ca. 866), had written more than 13 musicological treatises, is also the author of the monumental musicological work *Kitāb al-musīqī al-Kabīr* ("The Great Book of Music"); the Turkish philosopher Abū Naṣr al Fārābī (died 950); the prince of Samanids, philosopher, and the doctor of the manor Ibn Sīnā (980–1037); Ṣafī al-Dīn (died 1294), the author of *Kitāb al-adwār* ("The Book About the Cycles"), and many others.

[31] Two drums of the form of a cauldron. The leather of the first one is moistened and of the second one – heated. The sound of "dum" is produced by beating the frame and on the leather of the drum, and the sound of "tak" is produced by beating on the side of the drum; see: Curt Sachs, *Die Musik der Alten Welt*, Berlin: Akademie–Verlag, 1968, p. 265.

**a)** *sâmâ'î:*



**b)** *aksâk:*



**c)** *masmudî:*



**d)** *hindu dor:*



If we talk about the rhythmics of Arabian, Iranian (Persian), and Turkish classical music, it is very varied and enriched with ornaments. We can find not only the simple metres consisting of two or three parts, often with unexpectedly changing aspects, but also the compound metres – 5/8, 7/8, 8/16, 11/16, 12/16 and etc.[32] The foundation of the rhythmic cycles used in Persian classical music are the short rhythm formulas, made from long and short sounds. The cycles of the rhythm have their names. Besides, in order to learn them, the syllabic mnemonics taken from Arabians (Ṣafī al-Dīn) ("*tan, ta-nan, ta-na-nan*"),[33] which reflect the relative value of sound durations and the inner structure of rhythm cycles, is being used. Following Ṣafī al-Dīn, theorists normally defined rhythmic cycles in two ways. One was to divide a cycle into the same number of segments as there are time units and add symbols indicating those normally sounded. The other, parallel to the standard presentation of poetic metres in prosody, was to employ the syllables *ta, na* (each equivalent to one time unit) and *tan, nan* (*each equivalent to two time units*) and to divide the rhythmic cycle into feet of two to four time units, *ta* and *tan* always being initial in a foot, *na* medial and *nan* final. A representation such as *tanan tanan tananan tan tananan* suggests, accordingly, an internal 3+3+4+2+4 division and an associated distribution of percussions, with the initial time unit in a foot always sounded, the final one almost always not and the sounding of any medial ones generally optional. This means that the fluctuation of different musical durations and the relationship with poetic metrics has a significant meaning to the structure of the rhythm of Arabian, Persian, and Turkish classical music.

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[32] В. Виноградов, *Классические традиции иранской музыки*, Москва, 1982, p. 160.

[33] This mnemonics rhythmic system was described by Arabian musicologist, Ṣafī al Dīnas 13 a., in his book, *Kitāb al-adwār* ("Book of cycles"); see: Ṣafī al Dīn al Urmawī, *Kitāb al-adwār* (ed. Al-Rajab), Baghdad, 1980.

## The rhythmics of ancient Greek music

Ancient Greek music is another emphatic example of quantitative rhythmics. According to the famous Greek researcher of music, Thrasybulos Georgiades, Greek rhythmics is very simple and easy to understand. Its foundation is based on the fluctuation of the short and long rhythmic values.[34] The scholar emphasizes the relationship between the old Greek language, music, poetry, and dance. He states that the beginning of rhythm, music, poetry, and dance come from nowhere else but from the old Greek language. During the comparison of the rhythmics of ancient Greek and Western New Age music, Thrasybulos Georgiades indicates one fundamental difference. The first one has a typical quantitative character and the second one – a dynamic character.[35] This difference is noticed by the researchers from other countries as well. German musicologists, Klauso Mehnerio and Margret Hager, state that it is impossible to compare the rhythmics of Greek and German languages, because the rhythm of the German language is based on the fluctuations of stressed and not stressed syllables, whereas the rhythm of the Greek language is based on the fluctuations of long and short syllables.[36] Juozas Girdzijauskas, a researcher of Lithuanian versification, states that *"the least doubts and disagreements are caused dealing with the separation of antique versification into an independent, quantitative system of poetical language, in which the consistently fluctuating long and short syllables perform the function of the metre."*[37] The rhythm of ancient Greek music was based on the old Greek language and was very closely related with poetry and antique versification, which comparing to modern European versification (tonic and syllabic-tonic), was based not on dynamic but on quantitative relations. The influence of the rhythm of the Greek language to the music is seen very obviously in the melodic of this Sapho hymn (Υηέναιος της Σαπφούς):



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[34] Th. Georgiades, *Musik und Rhythmus bei den Griechen. Zum Uhsprung der abendlendischer Musik*, Hamburg: Rowohlt, 1958, p. 11–12.

[35] Th. Georgiades, *Der griechishe Rhytmus. Musik, Reigen, Vers und Sprache*, Hamburg: Rohwohlt, 1949, p. 21.

[36] Klaus Mehner, Margret Hager, *Rhytmus und Metrum in der Musik*, Leipzig, 1983, p. 37.

[37] J. Girdzijauskas, *Lietuvių eilėdara*, Vilnius, 1966, p. 18–19.

In the New Ages (17th–20th c.), in European music, which is based on the nature accented by metric rhythmics, lots of different sound durations and their relations are used (besides, they are supported with the structures of the measure). In the meantime, the rhythmics of ancient Greek music is based on the sounds of double duration – short (∪) and long (—). The proportion of durations is 1:2. Sometimes more complicated rhythmic proportions are used, such as hemiola (Gr. ἡμιόλιος) or *sesquialtera* (Lat.) 2:3, epitrite or *sesquitertia* (Lat.) 3:4, and etc.[38] The shortest value is not divided and serves as a starting point of duration.[39] In ancient Greek music, the function of the shortest time range and of the primordial cell of musical time is performed by *Chrónos prótos* (Gr. χρόνος πρωτος, primal time). Two short values (∪∪) are equal to one long value (–). Different musical structures are made from long and short values, which are called poetic feet. By joining several ordinary feet, compound feet – *dipodia*, *tripodia*, and *tetrapodia (tetrametron)* – are made.[40] The antique quantitative rhythm creates a possibility to make any combinations with long and short sounds. Sounds, besides, are not dependent on stressed relations.

There are certain connections between the additive rhythmics of Southeastern European countries and the durational rhythmics of ancient Greek. The additive rhythmics with its nature is very close to the quantitative rhythmics of ancient Greek music. Therefore, the additive rhythmics can also be found in the Balkans (Bulgaria, Macedonia, and Albania) and in Asia Minor. Some musicologists state that the additive rhythmics found in the folk music of Balkan countries and Asia Minor, originated from ancient Greek music.[41] By analyzing the rhythmics of Albanian folk music, an Albanian musicologist, Beniamin Kruta, pays attention to the abundance of "*aksak-rhythms*" and the "limping" rhythms that are met very often such as 5/8, 7/8, 9/8, and etc. Based on the inner structure of the rhythms (often met quantitative formulas –∪– and ∪ – –, also the formula corresponding to the antique *peon* ∪∪∪–) and on the references to Greek authorities (Dionysius of Halicarnassus, Aristides Quintilianus), the scholar concludes that *aksak-rhythms*, which are typical to Albanian folk music, originated from irrational (ἀλογοι) old Greek rhythms.[42] A German musicologist, Peter Giger, gives Macedonian examples of rhythm. Those examples are interesting because they allow a closer look into a not reconstructed phenomenon, which originated during the times of ancient Greece and which is still alive in today's musical practice:

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[38] A. Ambrazas, „Antikos muzikos teorinė sistema", *Muzikos enciklopedija*, t. 1, p. 63; B. Холопова, *Теория музыки*, Санкт-Петербург, 2002, p. 123.

[39] Klaus Mehner, Margret Hager, *Rhytmus und Metrum in der Musik*, Leipzig, 1983, p. 37.

[40] Ambrazas A., „Antikos muzikos teorinė sistema", *Muzikos enciklopedija*, t. 1, p. 63.

[41] Klaus Mehner, Margret Hager, *Rhytmus und Metrum in der Musik*, Leipzig, 1983, p. 38–39.

[42] Beniamin Kruta, "Die Metrorhytmik der albanischer Voklsmusik", *Rhytmik und Metrik in traditionellen Musikkulturen* (ed. O. Elschek), Bratislava: Veda, 1990, p. 97–120.

If we take a closer look at the formulas of the musical rhythm provided by Giger, we can see the relation with ancient Greek rhythmics.[43] Obviously, the structure of such rhythmic cycles is made from the parts of uneven duration (2+3; 3+2 and etc.) and their relation cannot be expressed with the whole number (the longer duration is always equal to 1,5 of the shorter). This is the reason that allows musicologists to think that those rhythms are based on foundations of unequal durations. Sometimes, when such rhythms are being described, the concepts of hemiola[44] [gr. *hēmi* – half] and hemiolic rhythm[45] can be used.

## The rhythmics of Estonian and Latvian songs

Let us analyze the rhythmics of folk music of Lithuanian neighbors – Estonians and Latvians. Latvian people are closely related to Lithuanians as they also are Indo-Europeans, the Balts. While Estonians are Finno-Ugric and not related to the Balts, they lived in the neighborhood of the Balts for thousands of years. Therefore, when the rhythmics of Estonian songs is being analyzed it is very hard to answer the question if the rhythmics was formed independently or it was the result of being close neighbors with the Balts.

Finnish and Estonian verses of rune could be an Finno-Ugric example of the quantitative rhythmic. Herbert Tampere, an Estonian musicologist, folklorist, and educator, notices that the rhythmics of old Estonian folk songs is dissolved by relations of quantitative (durational) values, which is very common to the Estonian language that has a constant fluctuation of short and long syllables.[46] The scholar notices that the singing of rune in its recitative manner is reminiscent of speech. The tunes of rune have kept a very close relation with the language. The syllables of the Estonian language differ in their duration. The quantity of the syllables performs a grammatical function, while the dynamic stress is not that important. The dynamic and durational aspects of the syllable are not related to one another, which is similar with the Lithuanian language. In the melody of more primitive songs, the stress of the sentence is sometimes emphasized by prolonging the musical sound. In this way unusual, asymmetric figures of rhythm are made (eg. ∪∪–∪).[47] In Tamperes, a collection of works in the Russian language, we can find a moderate anthology of Estonian songs published (63 songs in total).

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[43] Peter Giger, *Die Kunst der Rhythmus*, Mainz, 1993, p. 205.

[44] See А. Чекановска, *Музыкальная этнография. Методология и методика*, Москва, 1983, с. 110.

[45] R. Ambrazevičius, *Etninės muzikos notacija ir transkripcija*, Vilnius, 1997, p. 45.

[46] Х. Тампере, *Эстонская народная музыка*, Ленинград: Музыка, 1983, p. 7.

[47] *Ibid.*, p. 23–25.

At least two songs from the anthology have quantitative rhythmics, which is based on irregular fluctuation of short and long sounds. One of the songs is called a pasturage song (Nr. 23)[48] and the second one is a swinging song (Nr. 41).[49] The rhythmic picture of the last one is made from several constantly repeated rhythmic formulas:

∪∪∪/∪∪–∪/∪–∪∪∪//∪∪∪/∪∪–∪/∪–∪∪∪//
∪∪∪/∪∪∪/∪∪–∪/∪–∪∪∪//∪∪∪∪/∪∪–∪/∪–∪∪∪// etc.

Irregular, durational rhythm is a common characteristic of the most archaic[50] Estonian songs while rune hymns have a more regular rhythm since they determine the octasyllabic structure of the verses. Ethnomusicologist Ingrid Rüütel supports Tampere. She claims that, "*Classical rune verses are based on octasyllabic quantitative meter verses, where long and short syllables regularly shift with each other.*"[51]

Estonian runes are typologically related to our neighbor's – Latvian songs – quatrains. Stanzas of the songs are usually composed out of four eight-syllable verses, where the tendency of equal number of syllables dominates. Stanzas could be joined together according to the free will of the performer. According to a well-known Russian Indo-European and mythology researcher, Vladimir Toporov, Latvian quatrains (especially those with mythological content) are considered the oldest Indo-European example of epic poetry.[52] The number of song melodies is quite limited, but the number of quatrains is almost immense. Usually, on the same tune several different quatrains are being sung. Latvian ethno-musicologists write the songs down using the same value of notes, usually without a significant durational fluctuation. Nevertheless, while listening to the singing, it becomes clear that the durations of musical sounds are not equal, but obey the length of the text syllables. Here is an example. The name of the group is "Rasa" (director Valdis Muktupavels), the song from the CD "Beyond the River."[53]

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[48] The picture of the rhythm of the pasturing song:
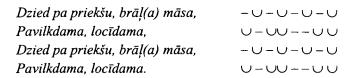
∪∪∪––∪/∪∪––∪/∪∪∪––∪/∪∪∪∪–∪//; *op. cit.*, p. 53.

[49] *Ibid.*, p. 55.

[50] Estonian folk song layers and their relationed chorography was being researched and provided by Estonian musicologist I. Rüütel; to the most archaic, older than rune songs, layer of folklore musical, she ascribed woop-signals, bird sound imitation, cantabile inserts of fairytales, lamentations and weepings, and children songs (according to Rüütel, they could appear about 1 thousand years BC): И. Рюйтель, *Исторические пласты эстонской народной песни в контексте этнических отношений*, Таллин, 1994, p. 16–27.

[51] И. Рюйтель, «Эстонский музыкальный фольклор», *Музыкальная культура Эстонской ССР*, сб. статей, Ленинград: Музыка, 1984, с. 11.

[52] В. Н. Топоров, «К реконструкции одного цикла архаичных мифопоэтических представлений в свете „Latvju dainas" (к 150-летию со дня рождения Кр. Барона)», *Балто-славянские исследования 1984*, Москва: Наука, 1986, с. 45.

[53] CD *Beyond the River. Seasonal songs of Latvia* © 1998 EMI Records Ltd., Hemisphere, EMI 493 3412.

| | |
|---|---|
| *Dzied pa priekšu, brāļ(a) māsa,* | – ∪ – ∪ – ∪ – ∪ |
| *Pavilkdama, locīdama,* | ∪ – ∪∪ – – ∪ ∪ |
| *Dzied pa priekšu, brāļ(a) māsa,* | – ∪ – ∪ – ∪ – ∪ |
| *Pavilkdama, locīdama.* | ∪ – ∪∪ – – ∪ ∪ |

The order of the first verse (by the way, a quantitative type, where the first syllable is emphasized by the length not by the stress) is suddenly destroyed by the second verse, where long and short syllables shift irregularly. Musical rhythm flexibly adjusts to the rhythmics of quantitative poetic text. In other stanzas of the song, the order of long and short syllables changes, therefore, each stanza is being sung in a different rhythm. It seems that we are facing a case of extra deep language and musical syncretism – musical rhythm is not independent and totally surrenders the dictate of the poetic rhythm. Metrical structures are not steady yet either, they are only developing (obvious bending towards chorea – ∪). The dominion of length relationship towards stresses allows considering this example as a quantitative rhythmic type. The characteristic of rhythm in part is based on the way stresses work in the Latvian language – Latvian stress position is fixed (the first syllable is usually stressed), for that reason the shift of durations becomes so obvious.

## The rhythmics of Lithuanian folk songs

Lithuanian folk music in the sense of quantitative rhythmics has not been researched a lot. Studies of the melodic of Lithuanian folk songs usually are narrowed to the analysis of rhythm formulas. Sometimes they mention cases with mixed and alternate rhythm. The melodic of Lithuanian songs has been researched by Jadvyga Čiurlionytė[54], rhythmics of calendar songs was researched by Rimantas Astrauskas[55], rhythmics of fairytales cantabile inserts – by Dalia Vaicenavičienė.[56] Rhythmics of Lithuanian *sutartinės* (old polyphonic

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[54] J. Čiurlionytė, *Lietuvių liaudies dainų melodikos bruožai*, Vilnius, 1969, p. 245–246.

[55] R. Astrauskas, „Kai kurie lietuvių liaudies dainų ritmikos bruožai", *Menotyra*, 1985, Nr. 13, p. 50–69.

[56] D. Vaicenavičienė, „Lietuvių liaudies pasakų dainuojamieji intarpai", *Liaudies kūryba*, t. 4, Vilnius, 1996, p. 80–97.

songs) was researched by Zenonas Slaviūnas[57], Rūta Gaidamavičiūtė[58], versification and po-
etic rhythm of Lithuanian folk song was researched by Leonardas Sauka.[59] Having analyzed
the characteristics of rhythmics of the oldest types of melodies, Jadvyga Čiurlionytė divided
them into three groups. The first group consisted of recitative melodies, which were closely
related to the speaking tone and had weak melodic elements. According to Čiurlionyte, the
second group consists of motory type melodies. The stressing of the rhythm, which is
common to these melodies, corresponds to the rhythm of work or dance movements. The third
group includes complicated melodies, where the leading melodic elements overmaster the
rhythm of word by the rhythm of music.[60]

Careful analysis of old and the oldest layer of Lithuanian folk songs reveals that the
dominant rhythm is not stress-based (qualitative) but durational (quantitative). In
Čiurlionytė's selection of Lithuanian folk song melodies, the song about the rye harvesting
with its rhythm reminds one of the Indian Vedic chant and ancient Greek music. The rhythmic
tone of this song is influenced by the sound shifts of different length (relation 1:2), while the
stress-based sound relationship does not have any meaning:



Pa - bėk,   ba - re - li,     ga - lan   va - la - ko,   ga - lan   va - la - ko.

It is not hard to notice that the length of syllables in the first stanza correspond to the
length of syllables of the musical sounds in 13 cases out of a total 15. This demonstrates the
deep syncretism of linguistic and musical rhythmics that existed in the past. The lengths of
syllables in the text probably heavily influenced the formation of song rhythm. Sometimes rye
harvesting song rhythmics is not so obvious because it is hidden by the more or less abundant
melismata.

Calendar songs have been thoroughly researched by ethnomusicologist Rimantas
Astrauskas. After the research and systematization of the rhythmics of calendar songs, he has
established separate formulas of common rhythm for Christmas songs. The scientist
somewhat groundlessly tends to ascribe calendar song melodies to the motory type rhythmics,
envisage stress-based melodic rhythm and relationship to the movement.[61] As there are a
number of cases where meter is mixed and alternate, and rhythm of calendar song melodies is

[57] Z. Slaviūnas, „Apie sutartinių ritmikos savitumą", *Liaudies kūryba*, t. 3, Vilnius, 1991, p. 15–20.

[58] R. Gaidamavičiūtė, „Sutartinių ritmika", *Menotyra*, 1981, Nr. 10, p. 41–55; R. Gaidamavičiūtė,
„Sutartinių ritmikos, poetinio teksto ir formos paralelės", *Menotyra*, 1985, Nr. 13, p. 70–85.

[59] L. Sauka, *Lietuvių liaudies dainų eilėdara*, Vilnius: Vaga, 1978.

[60] J. Čiurlionytė, *op. cit.*, p. 245–246.

[61] R. Astrauskas, *op. cit.*, p. 51–51.

quite irregular, there are some doubts about his interpretation. One should note, that the rhythm of mixed and alternate meter is created not by the stresses but by the changes of durations. Longer value sometimes emphasizes the endings of phrases and motives (DzM 109):



So - dzi - no  bro - lis          o - be - lė - lį,          ka - lė - da.

*Sodzino brolis obelėlį, kalėda.*

∪ ∪ ∪ ∪ – / ∪ ∪ ∪ – / ∪ ∪ – //

The sounds of some melodies of advent – Christmas period songs in the sense of length develop into more or less consistent rhythm formulas, which constantly repeat throughout the song.[62] It is not hard to notice the relationship between the rhythm formulas of these songs:

| | | |
|---|---|---|
| 5/8 | ∪∪–∪// | (DzM 104 a); |
| 7/8 | ∪∪–∪–// | (LTR 2618(20)); |
| 5/8+3/8 | ∪∪–∪–/–∪// | (LTR 3264(2)); |
| 5/8+2/4 | ∪∪–∪–/∪∪∪∪/ | |
| | ∪∪–∪–/∪∪–// | (DzM 104 b). |

Sometimes quantitative rhythmics so naturally grows into common to us equally pulsing metric rhythmics and becomes closely intertwined with it that only unexpected change of meter could reveal it. (ČLM 311; analogues example – DzM 105b):



At - bė - ga     e - l - nis     de - vy - nia - ra     -     gis,

oi     ka - lė     -     da     de - vy - nia - ra(gis).

Quantitative type 5/8 meter formation (∪∪–∪) unexpectedly intervenes into equal 3/8 meter movements and thus destroys the regular, consistent metric scheme. Probably, this is not an accident that a rhythmical insert having archaic origin corresponds with onomatopoeic word position ("Oi, kalėda").

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[62] See: DzM 104a, DzM 104b, LTR 2618(20), LTR 3264(2).

There are many examples of "incorrect" rhythmics in <u>shepherd folklore</u>, (whoopee (yippee) way of singing, also songs with the onomatopoeic word "*ralio*", shepherd sortilege), in <u>children's songs</u>, in <u>cantabile inserts of fairytales</u>. Musicologist, Dalia Vaicenavičienė, notices quantitative type of rhythmics in the cantabile inserts of fairytales and their relationship with the language: „*The characteristics of the spoken language are very evident in the rhythmics, intonation, and poetry of the cantabile inserts in fairytales. The rhythmics of the observable text is primarily seen in recitative cantabile inserts. The similar situation appears in other cantabile genres, which are close to spoken language – lamentation, weeping, shepherd songs (whooping, yipping, and repetition of onomatopoeic word "ralio", etc.). The rhythmic of some texts of cantabile inserts influences the melodic rhythm of the inserts.*"[63] The rhythmics of some shepherd songs with the repetition of "ralio" and some sortilege is controlled by the clear and differentiated value relationship. Therefore, they can also be ascribed to the quantitative rhythmic type (DzM 21, common rhythm formula ∪∪– ∪/∪∪∪–∪//):



The examples of quantitative rhythmics, which apparently disobey (or partially disobey) the stress-based pattern of rhythm, are plentiful in children's songs – cradlesongs, game songs, and animal carols.[64]

Sometimes it is possible to envisage the characteristics of quantitative rhythmics in melodies of more recent songs. Their rhythm is regulated by the repeated metric cycles, which originated from the alternation of values and which recur throughout the entire song. Our musical experience forces us to interpret them as examples of mixed and alternate meter. Looking from the point of view of stress-based (qualitative) rhythmic positions, the meter of the mentioned songs is mixed and alternate. However quantitative rhythm analysis would allow us to claim that these rhythms are of quantitative origin.[65] Čiurlionytė also recognized the archaic origin of these rhythms: „*As the melodic develops, consistent metric forms become stable, rhythmic facture differentiates. Because some earlier originated (in bold by E. V.) rhythmical formulas have become crystallized, freely pulsing rhythm becomes distinctive stress-based rhythm, which consists of alternatively repeated two and three part meter groups.*

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[63] D. Vaicenavičienė, *op. cit.*, p. 88–91.

[64] For example, „Stov oželis un tiltėlio" LLD(I) 370; „Turėjo bobutė žilą ožel‍į" LLD(I) 385; „Eik, oželi, vandens" LLD(I) 422; „Išgriuvo uodas" LLD(I) 674; „Vilkelis kamaroj" LLD(I) 631ю

[65] It is possible to notice the formula of stable quantitative rhythmics: 5/8 ∪∪–∪//; 5/8+3/8 ∪∪–∪/–∪//; 2/4 ∪∪∪∪/–∪–//; 6/8+7/8 ∪∪∪∪–/∪∪∪—//; 2/4+5/8+3/8 ∪∪∪∪/∪∪–∪/–∪//.

*In this way more common meter of five parts (5/4 and 5/8) and less common meter of seven parts (7/4 and 7/8) originates.*"[66]

That means that durational rhythm is more common in the older Lithuanian folk songs, while stress-based – in newer folk songs. Leonardas Sauka, who has carefully studied versification of the Lithuanian folk song, also notices that stress-based rhythm is uncommon for the old and the older layer of Lithuanian folk songs. This researcher claims that, *"most melodies [...] do not have strict and regular stress-based rhythm."*[67] Therefore, he legitimately questions the habit to divide songs into measures, in this way implicating the understanding of Western Europe's professional music where equal shifting of strong and weak parts of the measure are common. Sauka also notices that accentual and syllabic versification has not been formed in Lithuanian folk songs yet. He emphasizes that language and musical stresses often do not correspond in Lithuanian folk songs. Talking about the quantitative rhythmics of Lithuanian folk songs, the scholar writes the following: *"The importance of the quantity of vowels (the length of syllables depends on them) is emphasized in the rhythm of Lithuanian folk songs. The shifts of long and short syllables in verses are irregular and unorganized. However, in the clauses there is a strong dominant – the stressed syllable is often long."*[68]

The correlation of syllable and musical lengths is clearly noticeable in the oldest, relic layer of text – meaningless onomatopoeic, which mostly occur in refrains, or they themselves perform the function of a refrain: *ralio, valio* (yippee), *lalo* (∪–), *leliumai, tatato, ratilio* (∪∪–). However, this correlation of syllable and musical lengths (i.e. when the long syllable correlates with the long musical sound) in general is not frequent in Lithuanian folk songs. More often, long musical sound is correlated with the stressed syllable. This circumstance demonstrates that the text of Lithuanian folk songs and their music are not of the same age, and once again it verifies the fact that is well known to ethnomusicologists that poetic texts tend to change faster than the musical ones.

\* \* \*

While exploring the rhythmics of Lithuanian music in a quantitative aspect, it is not hard to notice that quantitative rhythmics is common to old and the oldest layer of Lithuanian folk songs. This is evident in a variety of groups of song genres – children's songs (cradlesongs, game songs, animal carols), work songs (rye harvesting, shepherding songs), and calendar songs. The similarity of old songs (especially rye harvesting and some Christmas songs) to Indian Vedic hymns and ancient Greek music (compare note examples No. 1, No. 3 and No. 5) is clear. This similarity is not a coincidence. It is determined by the typological commonality of rhythmics in the examples of studies – all of them are ascribed to the

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[66] J. Čiurlionytė, *Lietuvių liaudies dainų melodikos bruožai*, Vilnius, 1969, p. 247.
[67] L. Sauka, *Lietuvių liaudies dainų eilėdara*, Vilnius: Vaga, 1978, p. 13.
[68] *Ibid.*, p. 294.

quantitative not stress-based rhythmic type. This type of rhythmics is characterized by close musical and language links, the syncretic of music and language rhythm. It is quite regular that quantitative periodical rhythmics is common to the music of those nations, where the length and shortness of vowels play an important role. This circumstance witnesses the close interaction of language and music rhythms and doubtless language influence on the formation of musical durational rhythmics. An ethno-musicologist, Curt Sachs, provides a good insight concerning this question. He claims that, "Monosyllable languages are not good for the formation of quantitative versification. The separation of long and short syllables is less important than in those languages where polysyllable words dominate."[69]

However, does the typological similarity of the rhythmics mean the genetic relationship? Is it possible to consider quantitative rhythmics to be the arch-rhythmics of Indo-Europeans (especially having in mind the common opposition of long and short syllables in Indo-European languages)? Not necessarily. This phenomenon of typological similarities of the rhythm could happen independently from each other. The phenomenon of quantitative rhythmics appears in the music of nations that are unrelated to Indo-Europeans – Arab (semitic) and Estonians (Finno-Ugric). Of course, we need to have in mind that Arab musical rhythms could have been formed under the influence of ancient Greek and Persian Sasanidic dynasty music. Quantitative rhythmics of Estonian runes songs could be the result of the Baltic (Latvian and Lithuanian) neighborhood. Nevertheless, quantitative rhythmics exists in even more distant cultures, for example, in the music of the West African Akan tribe[70] and stockbreeders of Korea.[71] Therefore, it should be considered that quantitative rhythmics is a universal phenomenon, which transcends the Indo-European linguistic region.

Still, the idea that the rhythmics of ancient Indian, ancient Greek, and the old layer of Lithuanian folk songs have common Indo-European origin should not be totally discarded. Ethnomusicologists know very well that musical models change slower with time than the texts. They also recognize the stable musical models – the existence of "musical archetypes". However, this assumption of common Indo-European origin of quantitative rhythmics still needs further musicological research.

**Abbreviations:**

ČLM – *Lithuanian Folk Melodies*, prepared by Jadvyga Čiurlionytė, Vilnius, 1999.
DzM – *Dzūkų Melodies*, prepared by Genovaitė Četkauskaitė, Vilnius, 1981.
LLD(I) – *Lithuanian Folk Songbook*, I: Children's Songs, prepared by Pranė Jokimaitienė, Vilnius, 1980.

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[69] Curt Sachs, *Die Musik der Alten Welt*, Berlin: Akademie–Verlag, 1968, p. 124.

[70] Joseph H., Kwabena Nketia, *Die Musik Afrikas*, Wilhelmshaven: Florian Noetzel Verlag, 2000, p. 219–221.

[71] Hwang Byung-ki, "Philosophy and Aesthetics in Korea", *The Garland Encyclopedia of World Music*, vol. 4: East Asia: China, Japan, and Korea, New York and London: Routledge, 2002, p. 815.

LTR – Lithuanian Science Academy, the Manuscript Archive of Lithuanian Literature and Folklore Institute.
KTR – Lithuanian Music Academy, Achive of Musicology Ethnomusicology Section.

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# INDOEUROPIETIŠKOJO ARCHERITMO BEIEŠKANT

## (indų, arabų, graikų ir baltų muzikinės ritmikos lyginamoji analizė)

**Eirimas Velička**

S a n t r a u k a

Šiame straipsnyje nagrinėjama ir lyginama indų, arabų, antikinės Graikijos ir etninės lietuvių, latvių bei estų muzikos ritmika. Tyrime remiamasi tipologiniu ir lyginamuoju metodais. Muzikinės ritmikos reiškiniai nagrinėjami kvantitatyviniu (trukmės kiekybės) požiūriu. Atkreipiamas dėmesys į tipologinį panašumą, būdingą klasikinei indų, antikinei graikų muzikai ir senajam lietuvių liaudies dainų sluoksniui (lietuvių etnomuzikologė Jadvyga Čiurlionytė vedinio giedojimo skambesį yra palyginusi su lietuvių rugiapjūtės dainomis). Autorius kelia klausimą, ar minėtoms muzikinėms kultūroms būdinga trukminė (kvantitatyvinė) ritmika gali būti laikoma "indoeuropietiškuoju archeritmu", ar tai yra platesnio masto reiškinys, būdingas ir kitų kultūrų muzikai. Trukminė ritmika, būdinga sanskrito prozodijai ir klasikinei indų muzikai, klasikinei arabų muzikai, antikinei graikų muzikai, senajam lietuvių liaudies dainų sluoksniui (kalendorinėms ir darbo dainoms), iš esmės skiriasi nuo kvalitatyvinės (dinaminės, akcentinės), būdingos XVII–XX amžių Europos akademinei ir pop-muzikai. Kvantitatyvinės (trukminės) ritmikos pamato galima ieškoti kalboje – trumpųjų ir ilgųjų skiemenų kaitoje. Trumpųjų ir ilgųjų skiemenų kaita remiasi sanskrito poetiniai metrai (*chanda*), šia kaita grindžiama klasikinė arabų eilėdara (*'arūd*), klasikiniu kvantitatyvinės ritmikos pavyzdžiu laikytina antikinės graikų poezijos bei muzikos ritmika. Tikėtina, kad kvantitatyvinė eilėdara turėjo lemiamos įtakos indų ir arabų klasikinės muzikos ritmikos formavimuisi (indų *tāla*, arabų *īqā 'āt*); kvantitatyvinės ritmikos reiškiniams būdingas gilus kalbos ir muzikos sinkretiškumas. Dėsninga, kad kvantitatyvinė (trukminė) ritmika yra būdinga būtent tų tautų, kuriose balsių ilgumas ir trumpumas atlieka reikšminę funkciją, muzikai. Ši aplinkybė liudija apie glaudžią muzikos ir kalbos ritmo sąveiką ir neabejotiną kalbos įtaką muzikinės trukminės ritmikos reiškinių formavimuisi.

Panagrinėjus senojo lietuvių liaudies dainų sluoksnio (ypač kalendorinių ir darbo dainų, vaikų dainų, pasakų dainuojamųjų intarpų) ritmiką tampa akivaizdu, kad kai kuriems pavyzdžiams būdingesnė ne kvalitatyvinė (dinaminė, akcentinė), bet kvantitatyvinė (trukminė) ritmika. Muzikinių ir kalbinių trukmių sutapimas (t. y., kai ilgą skiemenį atitinka ilgas muzikinis garsas) lietuvių liaudies dainose apskritai nėra dažnas, tačiau skiemens trukmės ir muzikinės trukmės sutapimas aiškiai pastebimas seniausiame, reliktiniame teksto sluoksnyje – asemantiniuose garsažodžiuose, kurie dažniausiai pasitaiko priedainiuose, arba patys atlieka refreno funkciją: *ralio, valio, lalo* (∪–), *leliumai, tatato, ratilio* (∪∪–), *oi kalėda* (∪∪–∪).

Tačiau ar ritmikos tipologinis panašumas reiškia ir genetinį giminingumą? Nebūtinai. Tipologiškai panašūs ritmo reiškiniai galėjo susiklostyti ir nepriklausomai vieni nuo kitų. Kvantitatyvinės ritmikos reiškinių taip pat yra ir indoeuropiečiams negiminingų tautų – arabų (semitų) ir estų (finougrų) bei tolimų kultūrų (Vakarų Afrikos akanų genties, Korėjos gyvulių augintojų) muzikoje. Todėl reikėtų manyti, kad kvantitatyvinė ritmika yra universalesnis reiškinys, peržengiantis indoeuropietiškojo kalbinio regiono ribas. Ir visgi senovės indų, antikinės Graikijos ir lietuvių liaudies dainų senojo sluoksnio ritmikos bendros indoeuropietiškos kilmės idėjos nereikėtų visiškai atmesti. Ši kvantitatyvinės ritmikos bendros indoeuropietiškos kilmės prielaida dar reikalauja išsamesnių muzikologinių tyrinėjimų.

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