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UZBEK DOIRA USULS AND THE EUROPEAN SYSTEM OF METRE AND MEASURE: A COMPARATIVE ANALYSIS

Sobirova Oygul Alimovna
PhD. Assitent-teacher at the Department of Musical theory
Kokand state university
oygulsobirova178@gmail.com
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Abstract. This article presents a comparative analysis of two systems of rhythmic organisation: the European system of metre, measure and time signatures, studied in the course of elementary music theory, and the system of usuls, the rhythmic cycles performed on the doira that form the rhythmic foundation of Uzbek classical and folk music. The theoretical concepts of rhythm, pulse, tempo, metre, measure, strong and weak beats, simple and compound time signatures and syncopation are compared with the structure of usuls, their stroke types, cyclic nature and relationship with melody and poetic text. The study shows that the two systems share a common basis in the regular alternation of accented and unaccented moments, but differ in the way accent is produced, in the length and internal organisation of the rhythmic unit and in their function within the musical form. The article argues that the study of usuls should be included in music theory and solfeggio courses alongside the European metric system, and offers methodological recommendations: comparative tables, rhythmic exercises with stroke syllables, the parallel notation of melody and usul and listening analysis of maqom and folk examples. The results contribute to the integration of national musical traditions into music education.

Keywords: rhythm; metre; measure; time signature; usul; doira; Shashmaqom; syncopation; rhythmic cycle; comparative musicology; music education.

Introduction

Music is an art that unfolds in time. Its sounds follow one another, and each has its own duration. The organisation of these durations in time is called rhythm; the word comes from the Greek rhythmos, meaning regular flow or measuredness. Rhythm is found not only in music but also in speech, walking, dance and natural phenomena. The basis of rhythm is the pulse, a sequence of even, regular beats, and the speed of the pulse is called tempo. When beats are grouped into regularly alternating strong and weak ones, metre arises; the segment of music from one strong beat to the next is the measure, separated in notation by bar lines, and the time signature shows the number of beats in a measure and their duration. This system, studied in every course of elementary music theory, is the product of the European musical tradition. Its main concepts were formed in the seventeenth and eighteenth centuries and reflect the practice of European dance, song and instrumental music. Uzbek music, however, has its own historically developed system of rhythmic organisation: the usul. An usul is a rhythmic formula, a cycle of strokes performed on the doira (frame drum), which accompanies a melody and determines its rhythmic character. In the Shashmaqom and in many folk and classical genres the usul is the backbone of the composition, and different sections of a maqom are often named after or associated with particular usuls.

Teachers of music theory in Uzbekistan face a methodological problem: the curriculum teaches students the European metric system, while the music of their own culture is organised partly according to other principles. Students who have learned that a measure has one strong beat at the beginning are often confused when they hear an usul whose accents are distributed

differently. A comparative study of the two systems is therefore not only of theoretical interest but also of practical importance. The purpose of the article is to compare the European system of metre and measure with the Uzbek usul system and to propose ways of teaching them together.

Literature review

The theory of metre and rhythm in European music is presented in textbooks of elementary theory by I. V. Sposobin and V. A. Vakhromeev, which define simple, compound and mixed time signatures, syncopation, triplets and other rhythmic phenomena. In Western music theory, G. Cooper and L. B. Meyer proposed analysing rhythm through groupings of accented and unaccented pulses, and F. Lerdahl and R. Jackendoff distinguished metrical structure from grouping structure in their generative theory of tonal music. J. London, in his study of the psychology of musical metre, defined metre as a form of entrainment, a mental framework of expectations that listeners build on the basis of regular events. D. Temperley described computational models of metre perception. G. Toussaint analysed rhythmic patterns of many world cultures, including timelines and cyclic patterns, and showed that asymmetric rhythms are common throughout the world.

The theory of usuls has deep roots in the medieval music science of the Near and Middle East. Al-Farabi, Ibn Sina, Safi al-Din al-Urmavi and Abdurahman Jami described rhythmic cycles (iqa') as units composed of strokes of various duration. In the twentieth century Uzbek usuls were studied by A. Fitrat, who discussed their role in classical music, and by Yunus Rajabiy, whose editions of the Shashmaqom contain notations of the usuls. F. Karomatov devoted a substantial part of his study of Uzbek instrumental music to the doira and its rhythmic formulae. O. Matyakubov analysed the place of usuls in the structure of the maqoms. T. Levin described the role of rhythm in Central Asian music in the context of the living tradition. These works provide the basis for the comparison undertaken in this article.

Materials and methods

The research is based on comparative and analytical methods: the theoretical concepts of the European metric system, as presented in the music theory and solfeggio curriculum, are compared with the characteristics of Uzbek usuls described in musicological literature and observed in published notations and recordings of maqom and folk music. The comparison is organised according to several criteria: the source of accent, the length and structure of the rhythmic unit, the relationship with melody, the relationship with poetic text, the means of notation and the function in the musical form. Methods of generalisation and pedagogical modelling were used to formulate recommendations.

Results and discussion

The first result of the comparison is the identification of a common basis. Both systems are founded on the regular repetition of a rhythmic unit and on the contrast between more and less emphasised moments of time. In European music this unit is the measure with its strong and weak beats; in Uzbek music it is the usul cycle with its contrasting strokes. In both cases the listener perceives a stable framework against which the melody unfolds, and in both cases musicians count or internally feel this framework during performance. This is why students can learn usuls more easily if they rely on their knowledge of pulse, metre and measure.

At the same time, the systems differ substantially. Table 1 summarises the main differences.

Criterion	European metre and measure	Uzbek usul
Source of accent	dynamic stress: strong and weak beats	timbre and register of strokes: low central sound (bum) and high rim sounds (bak, tak, ka)

Rhythmic unit	measure, usually of two, three, four or six beats	usul cycle, which may be short or very long and asymmetric
Position of the main accent	normally on the first beat of the measure	determined by the pattern of the usul; may fall on different points of the cycle
Notation	time signature and bar lines	traditionally oral, using stroke syllables; in editions written with note values and changing or composite measures
Relation with melody	melody and metre are organised together in one notation	melody and usul are two layers that may be relatively independent
Function in form	metre usually remains constant within a section	change of usul often marks a new section or part of a cycle

Table 1. Comparison of the European metric system and Uzbek usuls

The first difference concerns the nature of accent. In the European system the strong beat is distinguished mainly by dynamic stress, by its position at the beginning of the measure and by harmonic and melodic support. In an usul the main contrast is created by the timbre and register of the strokes: the low, resonant stroke in the centre of the doira, conventionally called bum, contrasts with the high, sharp strokes near the rim, called bak, tak or ka. Thus the usul is not simply a pattern of loud and soft beats but a pattern of different sound colours. This timbral aspect is absent in the abstract European concept of metre and must be explained to students separately.

The second difference concerns the length and structure of the rhythmic unit. European measures are usually short and symmetrical: two, three or four beats, or compound measures such as six eighths that combine two groups of three. Usul cycles can be much longer and may consist of unequal groups. When such cycles are written in staff notation, editors use various solutions: long measures, mixed time signatures or alternating measures of different length. This explains why the same usul may look different in different editions and why students reading a maqom score may encounter irregular metres. The phenomenon is related to the concept of mixed metres in European theory (for example, five-four or seven-eight), which can serve as a bridge for explanation.

The third difference concerns the position of accents. In a European measure the first beat is normally the strongest. In an usul the most significant stroke may fall at different points, and the cycle may begin with an anacrusis-like series of strokes. Certain accents in an usul, when compared with the melody, produce an effect similar to syncopation: an accent on a weak part of the beat or on a weak beat. European theory defines syncopation as the displacement of accent from a strong to a weak beat; in the usul system such displacements are often not deviations but a normal part of the pattern. This shows that the concept of “strong” and “weak” is relative and depends on the system.

The fourth difference concerns the relationship between melody and rhythm. In European notation melody and metre exist in one line: each note is placed within a measure. In Uzbek music the melody and the usul are two layers performed by different musicians, the singer or instrumentalist and the doira player. The melody may move relatively freely over the usul, and its phrases do not always begin and end at the beginning and end of the cycle. Understanding this two-layer structure is important for the correct performance and analysis of maqoms.

The fifth difference concerns the connection with poetic text. In the classical vocal parts of the maqom the melody is closely connected with the aruz metre of the poetry, which is based on the alternation of long and short syllables. The rhythm of the melody therefore depends both on the

usul and on the prosody of the text. In European vocal music the connection between text and music is also important, but it is usually based on stressed and unstressed syllables rather than on syllable length.

The sixth difference is functional. In European music a single time signature usually remains constant throughout a section or a whole piece. In the maqom cycle the change of usul is an important formal device: different parts of a cycle, from slow, heavy sections to fast dance-like ones such as ufar, are characterised by different usuls and tempi. Thus the usul performs not only a rhythmic but also a form-building function.

These results allow us to formulate recommendations for teaching. First, in the music theory course, after studying pulse, metre, measure and time signatures, students should be introduced to the usul as another way of organising rhythm, with a comparative table similar to Table 1. Second, solfeggio and rhythm classes should include exercises in which students perform usul patterns using stroke syllables (bum, bak, tak) with hand clapping or on a frame drum, first slowly and then in tempo. Third, students should practise performing a melody against an usul: one group sings or plays the melody while another group performs the usul, which develops the sense of two independent rhythmic layers. Fourth, rhythmic dictations should include short usul patterns, which students write in staff notation and compare with published versions. Fifth, listening analysis should be carried out on recordings of folk songs and maqom fragments, in which students identify the usul, count the cycle and observe how melodic phrases relate to it. Table 2 shows an example of a sequence of exercises.

Stage	Exercise	Skill developed
1	clapping even pulse and grouping it into two, three and four beats	sense of pulse and metre
2	performing simple usul patterns with stroke syllables	timbral contrast of strokes, sense of cycle
3	writing heard usul patterns in staff notation	rhythmic hearing, notation skills
4	singing a familiar folk melody over a performed usul	coordination of melody and usul
5	listening analysis of maqom fragments	recognition of usuls and their role in form

Table 2. Sequence of exercises for studying usuls in music theory and solfeggio classes

Such an approach offers several advantages. It connects theoretical knowledge with the musical culture students hear around them; it broadens their understanding of rhythm beyond the European model; it develops polyrhythmic thinking and coordination; and it prepares future teachers and performers to work with national repertoire. It also helps students to see the European system not as a universal law but as one historically formed system among others, which is an important element of musical culture.

Conclusion

The comparative analysis has shown that the European system of metre, measure and time signatures and the Uzbek system of doira usuls share a common foundation in the regular repetition of a rhythmic unit and the contrast of emphasised and unemphasised moments. At the same time they differ in the nature of accent (dynamic in one case, timbral in the other), in the length and symmetry of the rhythmic unit, in the position of the main accents, in the relationship between

melody and rhythm, in the connection with poetic metre and in their function in musical form. Teaching both systems together, using comparative tables, exercises with stroke syllables, parallel performance of melody and usul, rhythmic dictation and listening analysis, will deepen students' rhythmic thinking and strengthen the place of national music in music education. Future research may focus on the systematic description of usuls for educational purposes and on the creation of a collection of rhythmic exercises based on Uzbek usuls.

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