The Formation of *Ruboī* Meters in Terms of Musical Rhythmic Rotations

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Abstract

In this article, the Tajik *maqom* master and pedagogue Abduvalī Abdurashidov approaches the problem of *ruboī* (a type of quatrain) versification from the standpoint of music. He takes us step-by-step through the process by which he arrives at the *ruboī* meters, with fascinating results that remind us of the interdependent nature of poetry and music.

Citation: Abdurashidov, Abduvalī. *The Formation of Ruboī Meters in Terms of Musical Rhythmic Rotations*. Translated by Evan Rapport, edited by Richard K. Wolf. Ethnomusicology Translations, no. 6. Bloomington, IN: Society for Ethnomusicology, 2017.

DOI: <https://doi.org/10.14434/emt.v0i6.23933>

Originally published in Tajik as “Tashakkul-i avzoni ruboī dar matn-i advor-i zarbi-i musiqī.” In *Falak va mas’alahoī ta’rixī-nazariyavi-i musiqi-i tojik*. Third International Symposium of Falak. Ministry of Culture of the Republic of Tajikistan: Dushanbe, Tajikistan, 2009.

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Translator's Introduction

In this article, the Tajik maqom master and pedagogue Abduvalī Abdurashidov approaches the problem of *ruboī* (pl. *ruboiyot*, a type of quatrain) versification from an unusual point of view. Prosodists have long debated the meters used for *ruboī*, primarily — — ♪ ♪ — ♪ — ♪ — — ♪ ♪ — and — — ♪ ♪ — — ♪ ♪ — — ♪ ♪ — , because of the difficulty in reconciling them with the Arabic *arūz* versification system as first established by the 8th century philologist al-Khalīl. Abdurashidov follows the established analysis of these meters in terms of "trees."¹ Abdurashidov's innovative contribution is to approach the poetic meters from the standpoint of music. And whereas many theorists have looked to poetry for the basis of musical rhythm, Abdurashidov takes the opposite stance, positing a musical basis for the poetic meters. As a theorist and a practicing musician deeply familiar with the rhythms of the Central Asian maqom, Abdurashidov takes us step-by-step through the process by which he arrives at the *ruboī* meters, with fascinating results that remind us of the interdependent nature of poetry and music, especially in terms of rhythm.

The main points of Abdurashidov's argument are as follows, divided by section:

The *Usul* in the Formation of *Ruboī* Meters (*Vazns*)

1. In the main section of the article, Abdurashidov designates the four basic *ruboī* meters:

— — ♪ / ♪ — — ♪ / ♪ — — ♪ / ♪ —
 — — ♪ / ♪ — ♪ — / ♪ — — ♪ / ♪ —
 — ♪ — / ♪ — — ♪ / ♪ — ♪ — / ♪ —
 — ♪ — / ♪ — ♪ — / ♪ — ♪ — / ♪ —

He arrives at these meters by starting with four variations of the *ufar* rhythmic cycle, represented in 6/8, constructed with modifications of the *rajaz* foot (*rajaz matvī*, or — ♪ ♪ —, and *rajaz maxbun*, or ♪ — ♪ —). By beginning on the fourth attack of each rhythmic cycle, transforming the first foot into three elements rather than four (i.e., a "broken" or *shikasta* form), and leaving the pause that occurs when stopping after thirteen syllables, the basic *ruboī* meters are created. A step-by-step example:

- a. Begin with the *ufar* rhythmic cycle using *rajaz matvī*:
 — ♪ ♪ — / — ♪ ♪ — / — ♪ ♪ — / — ♪ ♪ —

- b. Rotate the cycle, starting on the fourth attack:
 $\text{— — } \vee \vee / \text{— — } \vee \vee / \text{— — } \vee \vee / \text{— — } \vee \vee$
 - c. Transform the meter into a broken form by making the first foot three units:
 $\text{— — } \vee / \vee \text{— — } \vee / \vee \text{— — } \vee / \vee \text{— — } \vee / \vee$
 - d. Leave a pause that would occur where the cycle originally began, creating a thirteen-syllable meter:
 $\text{— — } \vee / \vee \text{— — } \vee / \vee \text{— — } \vee / \vee \text{—}$
- Finally, we have arrived at this standard *ruboī* meter (*hazaj musamman axrab makfuf majbub*).
2. Derivative or what Abdurashidov calls "composed" forms of these meters can be created by joining two short syllables or attacks when they occur consecutively, turning two short units into one long unit. Ultimately, there are 24 possible meters that begin with the *axrab* foot ($\text{— — } \vee$) and 6 possible meters that begin with the *ashtar* foot ($\text{— } \vee \text{—}$), creating two distinct metrical trees or families, both trees further containing two distinct circles of related meters. To return to the above example of the standard *ruboī* meter $\text{— — } \vee / \vee \text{— — } \vee / \vee \text{— — } \vee / \vee \text{—}$, a derivative meter can be created by combining the first two short attacks, yielding $\text{— — — } / \text{— — } \vee / \vee \text{— — } \vee / \vee \text{—}$. The table in this section helpfully indicates all of the meters in their fundamental and composed forms.

The *Atonin* of *Zarb* and the *Afoil* of *Vazn* in the *Ruboī*

3. What seem to be the same rhythmic patterns in music and poetry are actually different, based on an analysis of *atonin* (syllables articulating musical rhythms, such as “nan tan-nan” for long short-long, or $\text{— } \vee \text{—}$) and *afail* (syllables articulating poetic meters, such as *fo`ilotun* for $\text{— } \vee \text{— —}$). The table in this section provides the key rhythmic formulas as poetic feet and musical patterns.

The Nature of *Mizrob* in the Formation of *Ruboī* Rhythmic Types

4. Further variations of rhythmic structures can be created by combining a long attack and a short attack, resulting in a value equivalent to a dotted-quarter note in 6/8 time. This musical variation allows for analogous variations using the overlong syllable in prosody, with its value of $1\frac{1}{2}$ syllables.

Creation and Classification of *Ruboī* Poetic Meters

5. Unlike many other poetic forms, each four-line *ruboī* can contain various meters, although the variations must be contained within a metrical tree. There are three possible kinds of *ruboīs*: simple (every line is the same meter), compound (two, three, or four meters are used, but within one of the four circles), or mixed (two, three, or four meters are used, from two different circles, but still within one metrical tree).

Vazns* of Khayyam’s *Ruboiyot

6. *Ruboīs* written by Omar Khayyam are analyzed and employed as examples of the various possible *ruboī* forms. Khayyam composed using meters of the *axrab* family tree, and although he wrote in simple, compound, and mixed forms, most (about 70%) are in the mixed category.

The parentheses are in Abdurashidov's text, and square-bracketed annotations are mine. The endnotes contain both Abdurashidov's original notes and my own. I based my transliterations on the Cyrillic spellings of Persian terms, which may be unfamiliar to some readers, except with proper names (in which case I followed common spellings or standard Library of Congress transliterations).

Terms retained in the diagrams

Mizrob: metrical elision

She`r: poem

Usul: ideal rhythmic framework, rhythmic mode (also, a method)

Vazn: poetic meter (see also *bahr* below)

Zarb: The specific musical rhythm corresponding to the *vazn*; i.e. the quarter notes and eighth notes of the *zarb* correspond directly with the long and short syllables in the *vazn*. In the term *naxustzarb*, *zarb* refers to a "beat" or syllable that can be long or short, within a metric foot.

Other terms

Arūz: versification system used by Arab poets and applied to Persian and many other types of poetry. The *arūz* versification system is often termed "the science of *arūz*" (*'ilm-i arūz*), translated here variously as "*arūz* versification," "the science of *arūz*," or "*arūz* theory," depending on context.

Bahr: In the science of *arūz*, *bahr* refers to the original, theoretical set of meters devised by al-Khalīl and others, as opposed to the meters that poets, via various modifications of the *bahrs*, actually use. *Vazn* is the term for the meters actually in use (Elwell-Sutton, 42). As Abdurashidov uses both terms, sometimes in the same sentence, the original terms are also provided as necessary.

Doira: "circle." Here, the concentric circular diagrams are called *doira*, as opposed to their constituent rings, some of which are "rotations" (*davr*).

Davr: "rotation." These refer to four of the rings of the "circles," which represent rotations of a given metric pattern. Note that the first "rotation" begins in the same place as the *usul* and the *zarb*. The second rotation is rotated by one unit with respect to the first, and the third is rotated by one unit with respect to the second.

Afoil: mnemonic syllables that indicate poetic meters, such as *fo`ilotun* for — √ — —

Atonin: mnemonic syllables that indicate *zarbs*

A note on pluralization: all plurals that function as true plurals are indicated by the English "s" in the parenthetical glosses. Terms such as *usul*, which is treated as singular even though it is technically plural in Arabic, are glossed in this frozen plural form and then made plural again, if necessary, with an "s."

Overall my goal was to present Abdurashidov's detailed and technical analysis in a clear and idiomatic style that could be easily followed, and I hope that I have at least been partially successful in that respect.

The Formation of *Ruboī* Meters in Terms of Musical Rhythmic Rotations

From past sources to our contemporary literature, much has appeared on the study of poetic rhythms and their unbroken connections to music (e.g., Shams-i Qays 1991; Tūsī 1992; Aminov 1988; Davronov 1987, 1991; Vahīdiyān Kāmyār 1993; Semyonov 1946; Toirov 1991). But a serious analysis and investigation of this issue still lies ahead.

Foreign scholars have also written serious works regarding poetics, metrical versification, and their close connections with music. They speak about various poetic meters and analyze links between music and poetry. In our opinion, we have another opportunity today for seriously considering the connections between the composition of poetic meters and music, and the principal manner of forming *arūz* meters in the context of musical rhythms (*zarbs*). Regarding the topic of this symposium [the Tajik musical genre of *falak*], we noted that *ruboī* is considered the main form of *falak* poetry (Azizī 2009).

In this article we are only looking at the *relationship* of *ruboī* to music; that is, the method of forming *ruboī* meters (*vazn*) in terms of musical rhythmic cycles. We also want to pursue research and analysis of many other genres, discovering fresh insights into the issue. We aim to understand exactly the basis of *arūz* versification and whether it really has a connection to music. If it does, what kind of connection?

After analysis, research, and extensive consideration we concluded that *arūz* is directly based on musical rhythms (*zarbs*). Essentially, *arūz* composition—the order and formation of prosody—is impossible to conceive without preserving and understanding the laws and rules of musical rhythms. To restate, *arūz* versification is subject not only to the field of literature and poetry, but also to the science of music and music theory. The science of *arūz* versification did not just emerge with the establishment of short and long syllables, seen in the implementation of the Arabic “fa-`a-la”;² there appears to be evidence that musical rhythm and rules of melody (*ohang*) composition through the assigning of specific signs are essential to *arūz*. Unfortunately, for many years *arūz* has only been analyzed from the perspective of poetry theorists. *Arūz* still should be investigated from a philological perspective as its core concepts have not been accurately defined, but music theorists can seriously and scientifically work to resolve music’s inseparable connections to versification.

Khalil ibn Ahmad—the theorist of poetry and music, the foremost scholar of the eighth century, and the founder of *arūz* versification—specifically developed the laws of musical rhythm using an experimental method, and then developed the theories and rules of *arūz* versification based on those laws. At that time music still belonged to an oral tradition and those rhythms were not communicated with written symbols. Rhythms were only represented with signs for long and short, so discussion regarding *arūz* was very valuable (for more detail, see Vahīdiyān Kāmyār 1993; Toirov 1991; Shams-i Qays 1991).

Over the course of time, as musical rhythm came to be based on the principles of *arūz* versification, the performance of poetic texts became one of the main ways of combining poetry

and music. Actually, imbuing musical rhythm with the specific characteristics of poetic syllables increased its artistic merit.

In music the systematic form of *zarb* [performed rhythms, beats, attacks] is connected to the original sense of *usul* [ideal rhythmic frameworks or patterns] in a manner analogous to the way “rhythm” is related to “meter”; in performance, *usul* determines the type of rhythm and shapes its model and measure.³ That is, the fundamental principle and system of musical rhythm become clear in the solidification of *zarb* and *usul*, and are seen in the formation of the *arūz* system. *Zarb* and *usul* are like “two parts of one complete system, which in proper operation are opposed to each other in a single dialectic” (see Frolov et al. 1989). It should be emphasized that one cannot exist without the other and in the sphere of performance *zarb* without *usul* and *usul* without *zarb* are undesirable. A complete understanding can only emerge with both of them.

Poetic meters (*vazns*) are also like musical rhythms (*zarbs*) in the construction of various rhythmic modes (*usuls*). That is, poetic meters too are created in the form of concrete musical *usuls* and become equivalent with one of its rhythmic varieties. For example, the “main” (*aslī*) rhythmic circles (*doira*)—such as *mū`talifa*, *mujtaliba* and *munfarida* (*muttafiqa*)—and their corresponding “main” (*aslī*) meters (*bahr*)—such as *vofir*, *komil*, *hazaj*, *ramal*, *rajaz*, *mutadorik* and *mutaqorib*—are formed according to *usuls* in 7/8 and 4/8.<sup>4</sup> “Branch” [*far`ī*] rhythmic circles—such as *mushtabaha*, *muxtalifa*, *muntazia*, *muxtalita*—and their corresponding “branch” meters (*bahrs*), including *hazaj*, *ramal*, *rajaz*, *muzore`*, *mushokil*, *xafif*, *mujtass*, *munsareh*, *muqtazab*, *asamm*, *qarib*, *sarim*, *qalib*, *saghir*, *jadid* (*qarib*), *hamim*, *badil*, *hamid*, *sare`*, *salim* and *kabir*, are formed according to *usuls* in 6/8. In this way, the three aforementioned types of musical cycles (*usuls*) [7/8, 4/8, and 6/8 types] were used in forming all of the rhythmic circles of *arūz* meters (*vazn*).

One of the 6/8-type *usuls*, widely used in such Tajik traditional music genres as *shashmaqom*, *falak*, *ruboī*,⁵ came to be known as *ufar*. From the *ufar usul*, four differently formed types of rhythm (*zarb*) are involved in the formation of all the *zarb* circles and the various “branch” *arūz* meters (*bahrs*). In the context of *arūz* theory, each one has a title, such as *rajaz matvī*, *rajaz maxbun*, *rukn matvī* IV, and *rukn maxbun* IV. The first two of those types of *zarb*, comprising *rajaz matvī* and *rajaz maxbun*, establish rhythmic circles that become the basis of forming the rotations of *zarb* and the *ruboī* meters (*vazns*).

The *Usul* in the Formation of *Ruboī* Meters (*Vazns*)

Here we should be reminded that there are two types of *zarbs* in the *ufar usul*, 1) *rajaz matvī* [— √ √ —] and 2) *rajaz maxbun* [√ — √ —], which establish four “branch” rhythmic circles: two independent circles, *rajaz matvī* and *rajaz maxbun*, and two others that mix the two different *zarbs*, *rajaz matvī maxbun* [— √ √ — | √ — √ —] and *rajaz maxbun matvī* [√ — √ — | — √ √ —].⁶ These are reflected as such in the correlation of musical *zarbs*:

1. *Rajaz matvī* rhythmic circle⁷

Vazn: — √ √ — / — √ √ — / — √ √ — / — √ √ —
 muf-ta-`i-lun/muf-ta-`i-lun/muf-ta-`i-lun/muf-ta-`i-lun

Zarb: 6/8

Usul: 6/8
 tan-na ta-nan tan-na ta-nan tan-na ta-nan tan-na ta-nan
 bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak

Figure 1. *Rajaz matvī* rhythmic circle

2. *Rajaz maxbun* rhythmic circle

Vazn: ♪ — ♪ — / ♪ — ♪ — / ♪ — ♪ — / ♪ — ♪ —
ma-fo-`i-lun/ma-fo-`i-lun/ ma-fo-`i-lun/ ma-fo-`i-lun

Zarb: 6/8 ♪ ♪ ♪ ♪ , ♪ ♪ ♪ ♪ , ♪ ♪ ♪ ♪ , ♪ ♪ ♪ ♪ ,

Usul: 6/8 ta-nan ta-nan ta-nan ta-nan ta-nan ta-nan ta-nan ta-nan

bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak

Figure 2. *Rajaz maxbun* rhythmic circle

3. *Rajaz matvī maxbun* rhythmic circle

Vazn: — ʋ ʋ — / ʋ — ʋ — / — ʋ ʋ — / ʋ — ʋ —
 muf-ta-`i-lun/ma-fo-`i-lun/muf-ta-`i-lun/ma-fo-`i-lun

Zarb: 6/8

Usul: 6/8

tan-na ta-nan ta-nan ta-nan tan-na ta-nan ta-nan ta-nan
bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak

Figure 3. *Rajaz matvī maxbun* rhythmic circle

4. *Rajaz maxbun matvī* rhythmic circle

Vazn: ʋ — ʋ — / — ʋ ʋ — / ʋ — ʋ — / — ʋ ʋ —
ma-fo-`i-lun/muf-ta-`i-lun/ ma-fo-`i-lun/muf-ta-`i-lun

Zarb: 6/8

Usul: 6/8

ta-nan ta-nan tan-na ta-nan ta-nan ta-nan tan-na ta-nan

bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak

Figure 4. *Rajaz maxbun matvī* rhythmic circle

Each of the above rhythmic circles (*doira*) generate four rotations (*davr*) built according to each of the four attacks in the initial rhythmic quadrant [these are called *naxustzarbs*, lit. “first beats”; the quadrants are numbered in the second concentric circle, just before the syllable “ta” in the first case]. That is, each attack in the first quadrant becomes the starting point [*sarzarb*] for its respective rhythmic rotations (*davr* 1, *davr* 2, etc.). Rhythmic rotations of *ruboī* meters (*vazns*) are based on the fourth rotation of the circles, as shown in the examples below:

1. *Rajaz matvī* rhythmic circle, 4th rotation – *rajaz makfuf*⁸

Vazn: — — √ √ / — — √ √ / — — √ √ / — — √ √
mus-taf-`i-lu/mus-taf-`i-lu/mus-taf-`i-lu/mus-taf-`i-lu

Zarb: 6/8

Usul: 6/8
nan tan-na ta-nan tan-na ta-nan tan-na ta-nan tan-na ta
bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko

2. *Rajaz maxbun* rhythmic circle, 4th rotation – *ramal makfuf*

Vazn: — √ — √ / — √ — √ / — √ — √ / — √ — √
fo-`i-lo-tu/ fo-`i-lo-tu / fo-`i-lo- tu/fo-`i- lo- tu

Zarb: 6/8

Usul: 6/8
nan ta-nan ta-nan ta-nan ta-nan ta-nan ta-nan ta-nan ta
bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko

3. *Rajaz matvī maxbun* rhythmic circle, 4th rotation – *xafif makfuf*

Vazn: — √ — √ / — — √ √ / — √ — √ / — — √ √
fo-`i-lo-tu/ mus-taf-`i-lu/ fo-`i-lo-tu/ mus-taf-`i-lu

Zarb: 6/8

Usul: 6/8
nan ta-nan ta-nan tan-na ta-nan ta-nan ta-nan tan-na ta
bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko

4. *Rajaz maxbun matvī* rhythmic circle, 4th rotation – *mujtass makfuf*

Vazn: — — ♪ ♪ / — ♪ — ♪ / — — ♪ ♪ / — ♪ — ♪
mus-taf-`i-lu/ fo-`i-lo-tu/ mus-taf-`i-lu/ fo-`i-lo-tu

Zarb: 6/8 ♪ . ♪ ♪ ♪ ♪ . ♪ ♪ ♪ ♪ . ♪ ♪ ♪ ♪ . ♪ ♪ ♪
nan tan-na ta-nan ta-nan ta-nan tan-na ta-nan ta-nan ta

Usul: 6/8 ♪ — ♪ — ♪ — ♪ — ♪ — ♪ — ♪ — ♪ — ♪ — ♪ — ♪ — ♪ — ♪ — ♪ —
bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko

The above rhythmic rotations [i.e., the four that have been created by starting on the fourth attack of the first foot of each meter] have come to be known by the names *rajaz makfuf*, *ramal makfuf*, *xafif makfuf*, and *mujtass makfuf*. As we have seen, the rotations of rhythmic circles are formed from the feet [*rukṇ*] and *vazns* of various branch meters (*bahrho-i far'ī*). It is important to bear in mind that the fourth rotation of the derivative rhythmic circles also has a “broken” [*shikasta*] form. In the broken form of the fourth rotation, the overall structure of the rotation is transformed, as can normally be seen in the first quadrant of the rhythmic rotation. According to the general rules for structuring rhythmic rotations, four *naxustzarbs* [i.e., attacks] make up each foot and four parts [i.e., quadrants] make up each rotation of rhythm (*zarb*) and meter (*vazn*). But in the broken form of the rotation these rules change. We see this in the *zarb* and in the first foot of the rotation, which begin with three *naxustzarbs* [instead of four]. This transforms the logical structure of the rhythmic rotation within its symmetrical metric formation. In accordance with this, the structural ordering of the *zarb*'s *atonin* [mnemonic for rhythm] and of the meters of the rotation's *afō'il* [mnemonic for poetic meter] are also changed; so the very concept of creating a rhythmic rotation gets changed somewhat. The overt characteristics of this type of rotation in each of the two cases—the fourth rotation and its broken form—are the same; that is, within the foundation of one type of rotation, two concepts of rhythmic creation are seen. By applying the broken form of the derivative rhythmic rotations, two new types of [metrical] feet composed of three attacks are formed, named *axrab* [— — ♪] and *ashtar* [— ♪ —]. These feet, being specific to the broken form of the rotation, essentially define the starting point (*sarzarb*) at the top of the rotations. In sum, if any meter begins with either of these two feet, it must be directly related to the broken form of one of the derivative rhythmic rotations. The broken-form circle of the fourth rotation discussed above is created as follows:

1. *Rajaz matvī* rhythmic circle
Broken form of 4th rotation – *hazaj axrab makfuf*⁹

Vazn: — — √ / √ — — √ / √ — — √ / √ — — √ / √
maf-`ū-lu/ ma-fo- `ī-lu/ma-fo- `ī-lu/ ma-fo-`ī-lu /ma

Zarb: 6/8

Usul: 6/8
nan tan-na ta-nan tan-na ta-nan tan-na ta-nan tan-na ta
bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko

2. *Rajaz maxbun* rhythmic circle
Broken form of 4th rotation – *hazaj ashtar maqbuz*

Vazn: — √ — / √ — √ — / √ — √ — / √ — √ — / √
fo `i-lun/ ma-fo `i-lun/ma-fo -`i-lun/ma-fo -`i-lun/ma

Zarb: 6/8

Usul: 6/8
nan ta-nan ta-nan ta-nan ta-nan ta-nan ta-nan ta-nan ta
bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko

3. *Rajaz matvī maxbun* rhythmic circle
Broken form of 4th rotation – *hazaj ashtar makfuf maqbuz*

Vazn: — √ — / √ — — √ / √ — — √ — / √ — — √ / √
fo `i-lun/ ma-fo `ī-lu/ ma-fo `i-lun/ ma-fo `ī-lu/ ma

Zarb: 6/8

Usul: 6/8
nan ta-nan ta-nan tan-na ta-nan ta-nan ta-nan tan-na ta
bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko

4. *Rajaz maxbun matvī* rhythmic circle Broken form of 4th rotation – *hazaj axrab maqbuz makfuf*

Vazn: — — ♪ / ♪ — ♪ — / ♪ — — ♪ / ♪ — ♪ — / ♪
 maf- `ū-lu/ma-fo-`i-lun/ma-fo -`i-lu/ ma-fo `i-lun/ma

Zarb: 6/8 ♪ , ♪ ♪ ♪ ♪ , ♪ ♪ ♪ ♪ , ♪ ♪ ♪ ♪ , ♪ ♪ ♪ ♪
 nan tan-na ta-nan ta-nan ta-nan tan-na ta-nan ta-nan ta

Usul: 6/8 ♪ — ♪ — ♪ — ♪ — ♪ — ♪ — ♪ — ♪ — ♪ — ♪ — ♪ — ♪ —
 bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko

As we can see, the broken forms of the rhythmic rotations generate only *hazaj* metrical types (*vazns* of the *hazaj bahr*). That is, the meters (*vazns*) of the various “branch” *hazaj* types (*bahrs*) are grounded in the form of the fourth rotations of the circles discussed above. The formation of the *ruboī*’s *zarb* rotations and meters (*vazns*) can also be seen in this context.

According to the rules of musical rhythm, three types of basic [*aslī*] rhythmic “pauses” (*ist*) [or rests, caesuras, endings] appear in the aforementioned rotations: *maqbuz*, *mahzuf*, and *majbub*. That is, only the feet where the final element (syllable) is long establish basic “pauses” in the rhythmic rotation. The *ruboī*’s *zarb* rotations and meters (*vazns*) are constructed with rhythmic pauses of the *majbub*¹⁰ [♪ —] type. [Note the first and fourth diagrams in the following pages, which depict the main *ruboī* meters: *hazaj axrab makfuf majbub* (— — ♪ / ♪ — — ♪ / ♪ — — ♪ / ♪ —) and *hazaj axrab maqbuz makfuf majbub* (— — ♪ / ♪ — ♪ — / ♪ — — ♪ / ♪ —).

Rhythmic pause: *majbub*

The *hazaj axrab makfuf majbub* rotation

— — √ / √ — — √ / √ — — √ / √ —
maf-`ū-lu / ma-fo- `ī-lu/ma-fo- `ī-lu/fa-`al

nan tan-na ta-nan tan-na ta-nan tan-na ta-nan

 bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak

Figure 5. The *hazaj axrab makfuf majbub* rotation

2. *Rajaz maxbun* rhythmic circle
 Broken form of 4th rotation: *hazaj ashtar maqbuz*
 Rhythmic pause: *majbub*

The *hazaj ashtar maqbuz majbub* rotation

Vazn: — ♩ — / ♩ — ♩ — / ♩ — ♩ — / ♩ —
 fo -`i`-lun/ma-fo -`i`-lun/ma-fo-`i`-lun/fa-`al

Zarb: 6/8 ♩

Usul: 6/8 nan ta-nan ta-nan ta-nan ta-nan ta-nan ta-nan
 bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak

Figure 6. The *hazaj ashtar maqbuz majbub* rotation

Broken form of 4th rotation: *hazaj ashtar makfuf maqbuz*
 Rhythmic pause: *majbub*

[illegible]

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4. Rajaz maxbun matvī rhythmic circle

Rhythmic pause: *majbub*

The *hazaj axrab maqbuz makfuf majbub* rotation

Vazn:

— — √ / √ — √ — / √ — — √ / √ —
maf-`ū-lu/ ma-fo-`i-lun/ma-fo- `ī-lu/fa-`al

Zarb: 6/8

$\gamma \quad z \quad \gamma \quad \text{♩} \quad | \quad \text{♩} \quad \text{♪} \quad \text{♪} \quad \text{♩} \quad | \quad \text{♪} \quad \text{♩} \quad \text{♩} \quad \text{♩} \quad | \quad \text{♩} \quad \text{♪} \quad \text{♩} \quad \text{♩} \quad ||$

bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak bum-ba-ko-bak

Figure 8. The *hazaj axrab maqbus makfuf majbub* rotation

In this way, four variously named rhythmic rotations of *ruboī* meters (*vazn*) are produced. Two of them start with the *axrab zarb* [— — √] and are named as such: 1) *axrab makfuf majbub* and 2) *axrab maqbuz makfuf majbub*. The two others start with the *ashtar zarb* [— √ —] and are named as such: 1) *ashtar makfuf maqbuz majbub* and 2) *ashtar maqbuz majbub*. The rotations which start with the *axrab zarb* have become the basis of 24 different types of *ruboī* meters, which in all establish an independent *axrab* “tree.” Rotations which start with the *ashtar zarb* form the basis of six other *ruboī* meters, establishing their own independent *ashtar* tree. So the four rhythmic rotations and *ruboī* meters (*vazns*) create two general trees, the *axrab* tree and the *ashtar* tree, covering a total of 30 different *ruboī* meters. [These will be detailed in the following table. Note that each meter in the table counts as two possible meters, with two options for the final unit: long (—) or overlong (~).]

The number of resulting meters varies according to each rotation. For example, the *axrabi makfufi majbub* rotation consists of 16 types of *vazn* within the whole *axrab* tree of 24 types [this takes into account the 8 types in the rotation *axrab maqbuz makfuf majbub*]; whereas the two *ashtar* rhythmic rotations neatly build a total of 6 types of *vazn* in their own tree, including the two types of *vazn* seen in the *ashtari maqbuzi majbub* rotation.

The main method for expanding and forming all types of *ruboī* meters within their respective rhythmic rotations is through joining the short *naxustzarbs* [short syllables or attacks]. It should be reiterated that *ruboī* meters (like other kinds of poetic meters) consist of those that are “fundamental” (*asosī*) and those that are “composed” [*soxtashuda*, *hosilshuda*]. For example, in the context of the *ruboī* rotations, fundamental metric types are normally created without changes of *zarb*. By taking two types of rhythmic pauses or endings (*ist*) in the rotations *majbub* [√ —] and *ahtam* [√ ~], eight fundamental *ruboī* meters are formed, four of them belonging to the *axrab* tree and four others to the *ashtar* tree. All of the other *ruboī vazns*, being included in the composed-meters type, generate metrical types through the joining of their *naxustzarbs* [short syllables or attacks]. In considering the four types of rhythmic pauses or endings (*ist*) of fundamental and composed *ruboī* rotations, including *majbub* [√ —] and *ahtam* [√ ~], and *abtar* [—] and *azall* [~], these *ruboī vazn* types generate a total of 22 meters, of which twenty are connected with the *axrab* tree and only two with the *ashtar* tree. Thus, the *axrab* tree has a total of 24 meters, four of them fundamental and twenty of them composed. The *ashtar* tree has a total of six meters, four of them fundamental and only two of them composed,¹¹ as shown in this chart:

Axrab tree

I. *Axrab makfuf majbub* rotation

A. Fundamental meter (*vazn*)¹²

1. *hazaj musamman axrab makfuf majbub* /or *ahtam*/
— — √ / √ — — √ / √ — — √ / √ — or √ ~

B. Composed meters

1. *hazaj musamman axrab makfuf abtar* /or *azall*/
— — √ / √ — — √ / √ — — — / — or ~
2. *hazaj musamman axrab majbub* /or *ahtam*/
— — √ / √ — — — / — — √ / √ — or √ ~
3. *hazaj musamman axram axrab makfuf majbub* (or *ahtam*)
— — — / — — √ / √ — — √ / √ — or √ ~
4. *hazaj musamman axrab muxannaq abtar* (or *azall*)
— — √ / √ — — — / — — — / — or ~
5. *hazaj musamman axram axrab abtar* (or *azall*)
— — — / — — √ / √ — — — / — or ~
6. *hazaj musamman axram muxannaq axrab majbub* (or *ahtam*)
— — — / — — — / — — √ / √ — or √ ~
7. *hazaj musamman axram muxannaq abtar* (or *azall*)
— — — / — — — / — — — / — or ~

II. *Axrab maqbuz makfuf majbub* rotation

A. Fundamental meter

1. *hazaj musamman axrab maqbuz makfuf majbub* (or *ahtam*)
— — √ / √ — √ — / √ — — √ / √ — or √ ~

B. Composed meters

1. *hazaj musamman axrab maqbuz abtar* (or *azall*)
— — √ / √ — √ — / √ — — — / — or ~
2. *hazaj musamman axram ashtar makfuf majbub* (or *ahtam*)
— — — / — √ — / √ — — √ / √ — or √ ~
3. *hazaj musamman axram ashtar abtar* (or *azall*)
— — — / — √ — / √ — — — / — or ~

Ashtar tree

I. *Ashtar makfuf maqbuz majbub* rotation

A. Fundamental meter

1. *hazaj musamman ashtar makfuf maqbuz majbub* (or *ahtam*)
— √ — / √ — — √ / √ — √ — / √ — or √ ~

B. Composed meter

1. *hazaj musamman ashtar majbub* (or *ahtam*)
— √ — / √ — — — / — √ — / √ — or √ ~

II. *Ashtar maqbuz majbub* rotations

A. Fundamental meter

1. *hazaj musamman ashtar maqbuz majbub* (or *ahtam*)
— √ — / √ — √ — / √ — √ — / √ — or √ ~

B. Composed meters are not found in the above rotation.

Similarly, it must be recalled that, among the composed types of meters, other meters too are formed on the basis of the *axrab* rhythmic rotations. In *arūz* theory, it is customary to group the twelve *ruboī* meters with an *axram* foot [— — —] under the *axram* tree heading.¹³ In fact, with respect to the *axrab* rhythmic rotations, twelve meters appear with the *axrab* foot and twelve others with the *axram* foot.¹⁴ Perhaps this is the reason that, at first, the *ruboī* meters (*vazns*) have been separated into *axrab* and *axram* trees [as in the conventional analysis]. If we look at the rules for building *zarb* rotations and *ruboī* meters however, we will see that *ruboī* meters also begin with the *axram* foot. But here it should be noted that this [*axram*] foot is related to composed meter types and, according to the rules of rhythm, can never create its own tree. For in fact it [the *axram* foot] does not have its own independent rhythmic rotation; rather, the *axram* foot takes shape in the context of two *axrab* rhythmic rotations [*axrab makfuf majbub* and *axrab maqbuz makfuf majbub*] and is, as such, considered part of the composed meters (*vazns*). Now in order to confirm the aforementioned types of fundamental and composed *ruboī* meters (*vazns*) in terms of their trees and rhythmic rotations, recall:

Axrab Tree

I. *Axrab makfuf majbub* rotation

A. Fundamental rhythm (*zarb*) and meter (*vazn*)

1. *Axrab makfuf majbub* and *ahtam*

Vazn: — — ♪/ ♪— — ♪/ ♪— — ♪/ ♪— ♪~
 maf-`ū-lu/ma-fo-`ī-lu/ ma-fo-`ī-lu/ fa-`al or fa-`ūl

Zarb: 6/8 ♪
 nan tan-na ta-nan tan-na ta-nan tan-na ta-nan ta-nin

B. Composed rhythm and meters

i. With two short syllables/attacks (*naxustzarbs*) joined

1. *Axrab makfuf abtar* and *azall*

Vazn: — — ♪/ ♪— — ♪/ ♪— — — / — ~
 maf-`ū-lu/ ma-fo-`ī-lu/ma-fo-`ī- lun/ fa` or fo`

Zarb: 6/8 ♪
 nan tan-na ta-nan tan-na ta-nan tan-nan- nan nin

2. *Axrab majbub* and *ahtam*

Vazn: — — ♪/ ♪— — — / — — ♪/ ♪— ♪ ~
 maf-`ū-lu/ ma-fo-`ī-lun/ maf-`ū-lu/fa-`al or fa-`ūl

Zarb: 6/8 ♪
 nan tan-na ta-nan tan-nan nan tan-na ta-nan ta-nin

3. *Axram axrab makfuf majbub* and *ahtam*

Vazn: — — — / — — ♯ / ♯ — — ♯ / ♯ — ♯ ~
maf -`ū - lun/maf-`ū-lu/ma-fo-`ī- lu/fa-`al or fa`ul

Zarb: 6/8 ζ γ γ ♩ , ♩ ♪~♪ ♩ , ♩ ♪ ♪ ♩ , ♩ ♪ ♪ ♩ , || ♪ ♩ ||
nan tan-nan -nan-tan-na ta-nan tan-na ta-nan ta-nin

ii. With four short syllables/attacks (*naxustzarbs*) joined

1. *Axrab muxannaq abtar and azall*

Vazn: — — √/ √— — — /— — — / — ~
 maf -`ū-lu/ ma-fo -`ī- lun/maf -`ū-lun/ fa` or fo`

Zarb: 6/8
 nan tan-na ta-nan tan-nan -nan tan-nan - nan nin

2. *Axram axrab abtar* and *azall*

Vazn: — — — / — — √ / √ — — — / — ~
maf -`ū- lun/ maf-`ū-lu/ma-fo-`ī- lun/ fa` or fo`

Zarb: 6/8 ♪ ♩ ♩ | ♩ ♩ ♩ ♩ | ♩ ♩ ♩ ♩ | ♩ ♩ ♩ ♩ || ♩ ||
nan tan-nan -nan tan-na ta-nan tan-nan -nan nin

3. *Axram muxannaq axrab majbub* and *ahtam*

Vazn: — — — / — — — / — — ♪ / ♫ — ♫ ~
 maf -`ū- lun/maf-`ū-lun/ maf-`ū- lu/fa-`al or fa-`ül

Zarb: 6/8 ζ γ γ ♩ , ♩ ♩ ♩ ♩ , ♩ ♩ ♩ ♩ , ♩ , ♩ ♩ ♩ ♩ , , ♩ ♩ , ,
 nan tan-nan-nan tan-nan- nan tan-na ta-nan ta-nin

iii. With six short syllables/attacks (*naxustzarbs*) joined

1. *Axram muxannaq abtar and azall*

Vazn: — — — / — — — / — — — / — ~
 maf -`ū- lun /maf -`ū- lun /maf -`ū- lun/ fa` or fo`

Zarb: 6/8
 nan tan-nan-nan tan-nan -nan tan-nan- nan nin

II. Axrab maqbuz makfuf majbub rotation

A. Fundamental rhythm and meter

1. *Axrab maqbuz makfuf majbub* and *ahtam*

Vazn: — — √ / √ — √ — / √ — — √ / √ — √ ~
maf-`ū- lu/ma-fo-`i-lun/ma-fo-`ī-lu/fa-`al or fa-`ūl

Zarb: 6/8 ♩ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪
nan tan-na ta-nan ta-nan ta-nan tan-na ta-nan ta-nin

B. Composed rhythm and meters

i. With two short syllables/attacks joined

1. *Axrab maqbuz abtar and azall*

[illegible]

2. *Axram ashtar makfuf majbub* and *ahtam*

Vazn: — — — / — √— / √— — √/ √— √ ~
ma-f-`ū- lun/ fo-`i-lun/ma-fo-`ī- lu/fa-`al or fa-`ül

Zarb: 6/8 ♩ ♪ ♫ | ♩ ♪ ♫ | ♩ ♪ ♫ | ♩ ♪ ♫ | ♩ ♪ ♫ || ♩ ♪ ♫ ||
nan tan-nan-nan ta-nan ta-nan tan-na ta-nan ta-nin

ii. With four short syllables/attacks joined

1. *Axram ashtar abtal* and *azall*

Vazn: — — — / — ♫— / ♫— — — / — ~
maf-`ū- lun/ fo-`i-lun/ ma-fo-`ī- lun/ fa` or fo`

Zarb: 6/8 ♩ ♪
nan tan=nan -nan ta-nan ta-nan tan-nan -nan nin

Ashtar Tree

I. Ashtar makfuf maqbuz majbub rotation

A. Fundamental rhythm and meter

1. *Ashtar makfuf maqbuz majbub* and *ahtam*

Vazn: — ♩— / ♪— — ♪ / ♪ — ♩— / ♪— ♫~
fo-`i-lun/ ma-fo-`ī-lu/ma-fo- `i-lun/fa-`al or fa-`ūl

Zarb: 6/8 ζ γ γ ♩ , ♩ ♩ ♩ ♩ , ♩ ♩ ♩ ♩ , ♩ ♩ ♩ ♩ || ♩ ♩ ||

nan ta-nan ta-nan tan-na ta-nan ta-nan ta-nan ta-nin

B. Composed rhythm and meters

i. With two short syllables/attacks joined

1. *Ashtar majbub* and *ahtam*

Vazn: — ♩— / ♩ — — — / — ♩— / ♩— ♩~
fo-`i-lun/ ma-fo-`i- lun/ fo- `i-lun/fa-`al or fa-`ül

Zarb: 6/8 ♪ ♫ ♫ ♫ ♫ ♫ ♫ ♫ ♫ ♫ ♫ ♫ ♫ ♫ ♫ ♫ ♫ ♫
nan ta-nan ta-nan tan-nan- nan ta-nan ta-nan ta-nin

II. *Ashtar maqbuz majbub* rotation

A. Fundamental rhythm and meter

1. Ashtar maqbuz majbub and ahtam

Vazn: — ♩ — / ♩ — ♩ — / ♩ — ♩ — / ♩ — ♩ ~
fo-`i-lun/ ma-fo-`i-lun/ma-fo- `i-lun/fa-`al or fa-`ül

Zarb: 6/8 ♪ ♫ ♪ ♪ | ♪ ♪ ♪ ♪ | ♪ ♪ ♪ ♪ | ♪ ♪ | ♪ ♪ || ♪ ♪

nan ta-nan ta-nan ta-nan ta-nan ta-nan ta-nan ta-nin

B. Composed rhythm and meters are not found in this rotation, because two short syllables/attacks (*naxustzarbs*) do not come in succession.

As the above examples show, all of the rhythmic rotations and *ruboī* meters are created from thirteen long or short units of syllable/attack (*naxustzarb*): seven long ones (♩ - quarter) and six short (♪ - eighth). Four different *ruboī* rotations are also varied such that the function of the seven long and six short syllable/attack units is seen in each one. In the context of creating the rhythm and meters of the *ruboī*, each of the *naxustzarbs* has the responsibility for establishing the essential compositional unit. This point pertains mainly to the fundamental rhythms and meters of the *ruboī*, because, in the context of rhythmic rotations, they are formed without changes, and each of the *naxustzarbs* acts essentially as an independent compositional unit. With respect to other *ruboī* meters, including the composed rhythms and meters and especially with respect to the short syllables/attacks, the independence of the compositional unit sometimes gets lost; normally this is seen in the context of elision (*vaslshavī*). That is, short *naxustzarbs* that come consecutively in the structure of a rhythmic rotation normally have the possibility of being joined together. In this case, two short, essentially independent *naxustzarb* units connect to each other to establish one, essentially independent, long unit. As a result, two essentially independent units become transformed into one essentially independent unit and determine one compositional unit in all. For this reason, in composed *ruboī* meters the structural units are fewer. For example, in the context of the rhythmic rotation *axrab makfuf majbub*, the number of composed units is as few as 10, in the rotation *axrab maqbuz makfuf majbub*, as few as 11 units, and in the rotation *ashtar makfuf maqbuz majbub*, as few as 12 units. Only in the *ashtar maqbuz majbub* rotation, which has no changes, does the number of structural units remain at 13. For in this rotation the short *naxustzarbs* are not consecutive but rather come in between the long beats; the short *naxustzarbs* are not elided and different *vazns* are not produced.

The long and short *naxustzarbs* in the *zarb* rotations are built with their own special *atonin* [mnemonics] according to the different examples, with the long *naxustzarb* as “tan,” “nan,” and the short *naxustzarb* as “ta” and “na.” In the case of composed meters (*vazns*), two *naxustzarbs* joined together form one long *naxustzarb* unit, “tan” or “nan.”

The *Atonin* of *Zarb* and the *Afoil* of *Vazn* in the *Ruboī*

Since *zarb* and *vazn* are directly related, they complement one another other in the concept of forming compositions in *arūz* meters. Indeed it is impossible to comprehend the creation of *arūz* meters—including *ruboī* meters—if either *zarb* or *vazn* are left out. Although metrical poetry and their *afoil* formulas [mnemonic syllables that indicate poetic meters, such as *fo`ilotun* for — ♩ — —] are well known, many questions continually arise to which we still have not found concrete answers. For example, poetic feet like *axrab*, *axram*, and *ashtar* are formed both in the beginning and in the middle of poetic meters (including those of the *ruboī*) while maintaining similar *afoil* formulas in either position.

Take, for example, *axrab - maf-`ū-lu* [— — ♩], *axram - maf-`ū-lun* [— — —], and *ashtar - fo-`i-lun* [— ♩ —]. These are read/recited (*xondan*) the same way in the beginning and in the middle, and their differences in terms of *afoil* syllables are actually imperceptible. However, in terms of *zarb* and the conceptual underpinning of the *atonin*, these feet differ in each of the two positions. [*Atonin* syllables are similar formulas for the articulation of rhythmic patterns, such as “nan tan-

nan” for long short-long, or — √ —.] For example, the *atonin* of the *axrab* foot is read “nan tan-na” in both the initial and medial positions. Similarly for the *atonin* of the *axram* and *ashtar* feet: *axram* is read “nan tan-nan” and *ashtar*, “nan ta-nan,” in both initial and medial positions. At first, it seems that the first part of the feet, with the *atonin* reading “tan” or “nan,” is what makes the distinction and that is all. But in fact, it is very important whether these feet begin with “tan” or “nan,” because their creation in terms of this or that foot is directly related to the rules of forming *zarb* rotations and poetic meters. For example, the *axrab* foot that comes in the initial position is different from the *axrab* foot that comes in the middle, because it is based on the broken form of rotation IV—*rajaz makfuf*—the main *afail* and *atonin* for which are *mus-taf-`i-lu* and “nan-tan-na-ta” respectively. In the case of the broken foot of *rajaz makfuf*, one final short syllable is removed, and as a result the foot becomes the *axrab* of *hazaj*, as established in its *afail* and *atonin*: its *afail* goes from *mus-taf-`i* to *maf-`ū-lu*, while its *atonin* remains unchanged. With only one attack/syllable (*naxustzarb*) removed at its end, [the foot] acquires a different structure; i.e. its *atonin* takes the form *nan-tan-na*. The *axrab* foot that comes in the middle of the meters results from removing the first part of the *makfuf* foot, that is, removing the first unit of *ma-fo-`i-lu* leaves *fo-`i-lu*, which takes on the form *maf-`ū-lu*. In *atonin* terms, the removal of a short initial attack/syllable (*naxustzarb*) transforms “ta-nan-tan-na” into “nan-tan-na.” In other words, the *axrab* foot is formed in two ways. And for this reason, there are differences between them, and these differences can only be seen through the *atonin* of the *zarb* and its [the *atonin*’s] establishment in terms of the structure of *ruboī* rotations.

These principles also apply to the feet of *axram* and *ashtar*. That is, although the *axrab*, *axram*, and *ashtar* feet are read the same way in metrical *afail*, they are different from each other in terms of rhythmic *atonin*. In fact, in *arūz* versification the two cases of the *axram* foot have been previously identified: at the start of meters this foot is called *axram*, and in the middle, *muxannaq* or *taxniq*. That is, in this case, the conceptual underpinning of the *atonin* of the *zarb* is identified with different terms, the *atonin* of “nan-tan-nan” under the heading of *axram*, and “nan-tan-nan” under the heading “*muxannaq*.”

But the *atonin* of other feet, such as *axrab* and *ashtar*, have been represented with one name in both cases. This table shows the feet of *ruboī* meters correlated with metrical *afail* and rhythmic *atonin*:

Table 1. *Ruboī* feet correlated with metrical *afail* and rhythmic *atonin*.

№	Name of foot	Place of the foot in the meters	Formation and metrical analog in rhythm <i>atonin</i>
1	<i>Axrab</i> — — √	beginning and middle	6/8 maf - `ū -lu nan tan-na
2	<i>Axram</i> — — —	a) beginning	6/8 maf - `ū- lun nan tan-nan

3	<i>Muxannaq</i> — — —	b) middle	6/8 maf - `ū- lun	nan tan-nan
4	<i>Ashtar</i> — ♩ —	beginning and middle	6/8 fo - `i-lun	nan ta-nan
5	<i>Makfuf</i> ♩ — — ♩	middle	6/8 ma-fo - `ī -lu	ta-nan tan-na
6	<i>Solim</i> ♩ — — —	middle	6/8 ma-fo - `ī- lun	ta-nan tan-nan
7	<i>Maqbuz</i> ♩ — ♩ —	middle	6/8 ma-fo - `i-lun	ta-nan ta-nan
8	<i>Majbub</i> ♩ —	end	6/8 fa-`al	ta-nan
9	<i>Ahtam</i> ♩ ~	end	6/8 fa-`ūl	ta-nin
10	<i>Abtar</i> —	end	6/8 fa`	nan
11	<i>Azall</i> ~	end	6/8 fo`	nin

The Nature of *Mizrob* in the Formation of *Ruboī* Rhythmic Types

While the formation of the traditional Tajik system of musical rhythm partakes equally of *usul* and *zarb*, the nature of *mizrob* [rhythmic structures and their variants, formed by metrical elision] is special.¹⁵ At its core, the metrical elision (*mizrob*) is determined on the basis of the system of musical rhythm [*zarb*] and all of its various types are established according to rhythmic proportions. If in the context of music *mizrob* implies a broad notion, in the context of *zarb* and poetic meters, including *ruboī* meters, only one essential characteristic becomes prominent: the joining of one long *naxustzarb* with one short one. That is, *mizrob* determines the essential characteristics of all types of poetic rhythmic construction, without affecting the poem's fundamental metrical structure or changing the poetic meter.

The *mizrob*, being grounded in the fundamental and composed *ruboī* meters and *zarbs*, determine the many possibilities and varieties of their rhythms (*ritmika*). In fact, if we pay attention to the *ruboī* texts and their rhythmic structures, we know that the performance of one of the *mizrob* types is used in each case. And if, in the context of the *zarb* of the poetic meter, elision of long and short *naxustzarbs* is seen in the *mizrobs*, there will be elision of long and short syllables in the poem; *mizrob* also exists according to the structure of syllables whose value consists of 1½ syllables ["overlong" syllables]; for example, the words "guft," "bor," "yor," "ast," "dast," etc.

Thus it must be noted that *mizrob* are usually built on the basis of the meter's *zarb* and its particular *atonin*,¹⁶ including the short *naxustzarb* with "ta" or "na," and the long one with "tan" or "nan." *Mizrob* is the only context in which one long and one short *naxustzarb* are joined, in which case the two units connected together (♪~♪) are defined by *atonin* "ton" or "non" (and/or "tin" or "nin" at the end).

Thus we see poetic *mizrob* types formed in one of the *zarbs* and fundamental meters of the *ruboī*: *axrab makfuf majbub* (or *axrab makfuf ahtam*). Lines from the *ruboiyot* of Omar Khayyam are used as examples:

Hazaj musamman axrab makfuf majbub (or ahtam)

I. Basic *mizrob*

She`r: Maĩ-ro- na-xu-rad-mar-du-mi-do -no- ki-xu-rad?
 As- ro- ri-a- zal-ro- na-tu-do -ni- vu-na-man
 Vazn: — — V/V — — V/V — — V/V —
 maf-`ũ- lu/ma-fo- `ĩ- lu/ma-fo -`ĩ lu/fa-`al
 Zarb: 6/8 ǂ ǂ ǂ ǂ ǂ ǂ ǂ ǂ ǂ ǂ ǂ ǂ ǂ ǂ ǂ ǂ
 nan tan-na ta-nan tan-na ta-nan tan- na ta-nan
 Mizrob: 6/8 ǂ ǂ ǂ ǂ ǂ ǂ ǂ ǂ ǂ ǂ ǂ ǂ ǂ ǂ ǂ ǂ
 nan tan-na ta-nan tan-na ta-nan tan- na ta-nan

II. Connected *mizrobs*

A. With two connected *naxustzarbs*

1. Connection of *naxustzarbs* 10 and 11

She`r: Ġam- ro- zi-ja-hon-ġak-sa-ra-bar-doš -ta- me
Az - xo- ki-da-ri- maġ-ka-da-jū- ġed -ma- ro
Vazn: — — V / V — — V / V — — V / V —
maf -`ū- lu/ma- fo -`ī-lu/ma- fo-`ī- lu/ fa-`al
Zarb: 6/8 ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ
nan tan-na ta- nan tan-na ta- nan tan-na ta-nan
Mizrob: 6/8 ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ ǰ
nan tan-na ta-nan tan-na ta- nan ton ta-nan

2. Connection of *naxustzarbs* 6 and 7

She`r: Az- raf-ta-qa-lam- hej -di-gar- gun-na-ša-vad
 O- qil-ba-či-um- med -da-rin- kūh-na-sa-ro

Vazn: — — ♫/♫ — — ♫/♫ — — ♫/♫ —
 maf -`ū- lu/ma-fo -`ī- lu/ ma-fo-`ī- lu/fa-`al

Zarb: 6/8 ♩ ♪ ♪ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩
 nan tan- na ta-nan tan-na ta-nan tan-na ta- nan

Mizrob: 6/8 ♩ ♪ ♪ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩
 nan tan- na ta-nan ton ta-nan tan-na ta-nan

3. Connection of *naxustzarbs* 2 and 3

She`r: Bar- dahr -ma-kun-tak-īa-ki-dav-ro-ni- fa-lak
 Maī- nūš -ba-har-mah-fi-lu-har-an-ju- ma-ne

Vazn: — — ♫/♫ — — ♫/♫ — — ♫/♫ —
 maf -`ū- lu/ma-fo -`ī-lu/ ma-fo-`ī- lu/ fa-`al

Zarb: 6/8 ♩ ♪ ♪ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩
 nan tan-na ta-nan tan-na ta-nan tan-na ta-nan

Mizrob: 6/8 ♩ ♪ ♪ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩
 nan ton ta-nan tan-na ta-nan tan-na ta-nan

B. With four connected units

1. Connection of *naxustzarbs* 6,7 and 10,11

She`r: Sar -riš-ta-ïi-as- ror -na-do -nist -ka-se
 Az -bo -da-ču-non-mast -ni-gah-dor -ma-ro

Vazn: — — ♀/♀ — — ♀/♀ — — ♀/♀ —
 maf -`ū- lu/ma-fo -`ī -lu/ma-fo- `ī -lu/ fa-`al

Zarb: 6/8 ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩
 nan tan-na ta-nan tan-na ta-nan tan-na ta-nan

Mizrob: 6/8 ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩
 nan tan-na ta-nan ton ta-nan ton ta-nan

2. Connection of *naxustzarbs* 2,3 and 10,11

She`r: Bin-hand -ïa-ke -to -bi-ra-bo-ïand- di-gar
 Pas-farq -mi-ïo -ni -ma-nu-tu-čist- bi-gū?

Vazn: — — ♀/♀ — — ♀/♀ — — ♀/♀ —
 maf-`ū- lu/ma-fo -`ī -lu/ ma-fo-`ī- lu/fa-`al

Zarb: 6/8 ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩
 nan tan-na ta-nan tan-na ta-nan tan-na ta-nan

Mizrob: 6/8 ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩
 nan ton ta-nan tan-na ta-nan ton ta-nan

3. Connection of *naxustzarbs* 2,3 and 6,7

She`r: To-čand -ma-ro-dard -di-had-so-qi-īi-umr
 Vaz-hej -ka-se-niz -du-gū-šam-na-šu-nud

Vazn: — — ♀ / ♀ — — ♀ / ♀ — — ♀ / ♀ ~
 maf-`ū- lu/ma-fo -`ī-lu/ma-fo-`ī- lu/fa-`al

Zarb: 6/8 ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪
 nan tan-na ta-nan tan-na ta-nan tan-na ta-nin

Mizrob: 6/8 ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪
 nan ton ta-nan ton ta-nan tan-na ta-nin

C. With six connected *naxustzarbs*

1. Connection of *naxustzarbs* 2,3 and 6,7 and 10,11

She`r: Bis-īor -ma-xūr-foš -ma-kun-vird -ma -soz
 Kam-mond -zi-as- ror -ki-maf-hum -na -šud

Vazn: — — ♀ / ♀ — — ♀ / ♀ — — ♀ / ♀ — ♀ ~
 maf-`ū- lu/ma-fo -`ī-lu/ ma-fo- `ī -lu/fa-`al or fa`ul

Zarb: 6/8 ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪
 nan tan-na ta-nan tan-na ta-nan tan-na ta-nan ta-nin

Mizrob: 6/8 ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪ ♪
 nan ton ta-nan ton ta-nan ton ta-nan ta-nin

As the different examples demonstrate, *mizrob*—being formed from rhythmic rotations—is based on the composition of poetic meters and defines the various rhythmic forms the poem can take, without disturbing the poem’s metric structure. If *mizrob*, grounded in *zarb* and poetic meters, determines other types of rhythmic formation, the poem itself can be created on the basis of existing *mizrobs*. In other words, the possibilities of poetic rhythm directly depend on the *mizrobs* that can be established.

Similarly it should be noted that in terms of *mizrobs*—that is, the joining of long and short *naxustzarbs*—the overall quantity of poetry’s *zarb* and *vazns* is never reduced. That is, if in the basic *mizrob* (as in the fundamental *zarb* and meter) poetic syllables establish thirteen units, in the connected *mizrobs* (or those than have been joined), poetic syllables are formed in as few as

seven units. For example, in the fundamental metric ground and composed rotations *axbar makfuf majbub*, according to the ways of creating *mizrob*, the poetic syllables are manifested in as few as ten units; in rotations *axbar maqbyz makfuf majbub*, in as few as nine; in rotations *ashtar makfuf maqbuz majbub* in as few as eight, and in rotations *ashtar maqbuz majbub* in as few as seven. There are more opportunities for *mizrob* variants in the fundamental meters of *ruboī* rhythmic rotations, and fewer in the composed meters. As short *naxustzarbs* get joined in the process of producing different meters, the opportunities for creating types of *mizrob* are also steadily reduced. No type of *mizrob* can be established in one of the composed meters of the *axrab makfuf majbub* rotation, which has been known under the name of *hazaj musamman axram muxanaq abtar* (or *azall*). Because all of its short *naxustzarbs* have been connected, no practical possibilities remain for forming any metrical elision.¹⁷

And, by contrast, the greatest opportunity for creating *mizrobs* is in the fundamental meter of the *ashtar maqbuz majbub* cycle, which is also known as *hazaj musamman ashtar maqbuz majbub* (or *ahtam*). Six types of joined *naxustzarbs* appear in the above-mentioned meter and, according to the creation of *mizrobs* of the *zarb*, in all, the poetic syllables arrive at 7 units. For example:

She`r:	Boz	-raxt	-bast	-qalb	-īor	-šod	-gašt
Vazn:	—	√	— / √	—	√	— / √	— √ ~
	Fo-	`i-lun/	ma-fo	-`i-lun/	ma-fo	-`i-lun/	fa-`ul
Zarb:	6/8	γ ζ γ	♪	♪	♪	♪	♪
		nan	ta-nan	ta-nan	ta-nan	ta-nan	ta-nin
Mizrob:	6/8	γ ζ γ	♪	♪	♪	♪	♪
		non -	non	-non	- non	-non	non - nin

In summation, if in the context of rhythmic rotations and poetic meters short *naxustzarbs* can be joined, various types of *zarb* and poetic meters will be produced. And in a different context, if long and short *naxustzarbs* can be combined, various types of *mizrobs* of *zarb* and poetic meters come into being.

Creation and Classification of *Ruboī* Poetic Meters

Ruboī is one of the types of poetry in which each of the four lines can be established in various meters. For this reason also, the *ruboī vazns* are not defined by one concrete form in the system of *arūz* meters. Inasmuch as the series of *ruboī* meters is generally structured in terms of one of the trees, all of the *ruboī* meters carry the name “in the form of this or that tree.” According to the rules for forming *zarb* and *vazns* of the *ruboī*, the *ruboī vazns* can be established in the form of the *axrab* tree or the *ashtar* tree. That is, the various kinds of *ruboī* arrangement can only appear within the bounds of one of these trees. Within these trees, there are generally three types of *vazn* arrangement in the *ruboī*, which we will define as simple [*odī*], compound [*tarkibī*], and mixed [*omexta*]. In the “simple” type, the arrangement of its *vazns* is homogeneous, meaning all four lines of the *ruboī* are constructed in one metrical type. From our perspective, this type of

ruboī is like other poetic varieties constructed on the basis of one type of *vazn*. For this reason, this type of *ruboī* meter, like other poetic meters such as those of the *ghazal*, *masnavī*, *qit'a*, and so forth, possesses its own metrical model [i.e., in requiring each line to have the same metrical structure this simple kind of *ruboī* meter functions like these other meters].

Each of the 24 *ruboī* meters in the *axrab* tree and six others in the *ashtar* tree can be created in this way. As for arrangements of simple-type *ruboī* meters we give several examples:

Simple type

A. In the *axrab* tree

Rotation 1.	Rotation 2.
— — √/ √— — √/ √— — √/ √—	— — √/ √— √— / √— — — /—
— — √/ √— — √/ √— — √/ √—	— — √/ √— √— / √— — — /—
— — √/ √— — √/ √— — √/ √—	— — √/ √— √— / √— — — /—
— — √/ √— — √/ √— — √/ √—	— — √/ √— √— / √— — — /—

B. In the *ashtar* tree

Rotation 1.	Rotation 2.
— √— / √— — — / — √— / √—	— √— / √— √— / √— √— / √—
— √— / √— — — / — √— / √—	— √— / √— √— / √— √— / √—
— √— / √— — — / — √— / √—	— √— / √— √— / √— √— / √—
— √— / √— — — / — √— / √—	— √— / √— √— / √— √— / √—

In the “compound” type of *ruboīs*, the arrangement of *vazns* is varied. They are formed on the basis of the aforementioned rotations of *zarb* and *ruboī* trees [i.e., *axrab makfuf majbub*, *axrab maqbuz makfuf majbub*, and *ashtar makfuf maqbuz majbub*].¹⁸ There are many *vazn* arrangements of the above type. For example, a total of 14 different kinds of *vazn* arrangement can be seen in connection with the two *vazn* types that comprise one of the *ruboī*’s rhythmic rotations. These divide the four lines of the *ruboī* into two parts:

- 1) 3 x 1, or 3 lines in one *vazn* type and 1 line in another;
- 2) 2 x 2, or 2 lines in one *vazn* type and 2 lines in another.

They are shown in this chart:

Compound type

I. In relation to two types of *ruboī vazn*:

3 x 1:	1) 1	2) 1	3) 1	4) 2	5) 2	6) 2	7) 2	8) 1
	1	1	2	1	2	2	1	2
	1	2	1	1	2	1	2	2
	2	1	1	1	1	2	2	2

2 x 2: A.	1) 1	2) 1	3) 2	4) 2
	1	2	2	1
	2	2	1	1
	2	1	1	2

B.	1) 1	2) 2
	2	1
	1	2
	2	1

Now we will cast a glance at the correlation between the *axrab* tree's two *vazn* types. [In the following table, the two meters are] within the rhythmic rotation of *axrab makfuf majbub*: 1) *axrab makfuf majbub* [— — √ / √ — — √ / √ — — √ / √ —] and 2) *axrab makfuf abtar* [— — √ / √ — — √ / √ — — — / —]. Of the fourteen possible types in the compound *vazn* arrangement, we give only three different types in this example:

Metric types: 1. *Axrab makfuf majbub* 2. *Axrab makfuf abtar*

3 x 1 (Type 1)

1. — — √ / √ — — √ / √ — — √ / √ —
1. — — √ / √ — — √ / √ — — √ / √ —
1. — — √ / √ — — √ / √ — — √ / √ —
2. — — √ / √ — — √ / √ — — — / —

2 x 2 (Type 1A)

1. — — √ / √ — — √ / √ — — √ / √ —
1. — — √ / √ — — √ / √ — — √ / √ —
2. — — √ / √ — — √ / √ — — — / —
2. — — √ / √ — — √ / √ — — — / —

2 x 2 (Type 1B)

1. — — √ / √ — — √ / √ — — √ / √ —
2. — — √ / √ — — √ / √ — — — / —
1. — — √ / √ — — √ / √ — — √ / √ —
2. — — √ / √ — — √ / √ — — — / —

The correlation of three and four varied types of *ruboī vazn* also appears in the “compound” type in the context of one of the trees’ rotations, yielding a great number of *vazn* arrangements. For example:

II. Three metric types

A. *Axrab* tree – the *axrab maqbuz makfuf majbub* rotation

Metric types: 1. *Axrab maqbuz makfuf majbub*
2. *Axrab maqbuz abtar*
3. *Axram ashtar makfuf majbub*

2 x 1 x 1 (Type 1)

1. — — √/√ — √ — / √ — — √/√ —
1. — — √/√ — √ — / √ — — √/√ —
2. — — √/√ — √ — / √ — — — / —
3. — — — / — √ — / √ — — √/√ —

(Type 2)

1. — — √/√ — √ — / √ — — √/√ —
2. — — √/√ — √ — / √ — — — / —
3. — — — / — √ — / √ — — √/√ —
1. — — √/√ — √ — / √ — — √/√ —

B. *Axrab* tree – the *axrab makfuf majbub* rotation

Metric types: 1. *Axrab makfuf abtar*
2. *Axram axrab makfuf majbub*
3. *Axram muxannaq abtar*

2 x 1 x 1 (Type 1)

1. — — √/√ — — √/√ — — — / —
1. — — √/√ — — √/√ — — — / —
2. — — — / — — √/√ — — √/√ —
3. — — — / — — — / — — — / —

(Type 2)

1. — — √/√ — — √/√ — — — / —
2. — — — / — — √/√ — — √/√ —
3. — — — / — — — / — — — / —
1. — — √/√ — — √/√ — — — / —

III. Four metric types

A. *Axrab* tree – the *axrab makfuf majbub* rotation

Metric types: 1. *Axrab makfuf majbub*
2. *Axrab majbub*
3. *Axram axrab abtar*
4. *Axram muxannaq axrab majbub*

Four different *vazns* (Type 1)

1. — — √/√ — — √/√ — — √/√ —
2. — — √/√ — — — / — — √/√ —
3. — — — / — — √/√ — — — / —
4. — — — / — — — / — — √/√ —

(Type 2)

2. — — √/√ — — — / — — √/√ —
3. — — — / — — √/√ — — — / —
4. — — — / — — — / — — √/√ —
1. — — √/√ — — √/√ — — √/√ —

B. *Axrab* tree – the *axrab maqbuz makfuf majbub* rotation

Metric types: 1. *Axrab maqbuz makfuf majbub*
2. *Axram ashtar makfuf majbub*
3. *Axrab maqbuz abtar*
4. *Axram ashtar abtar*

Four different *vazns* (Type 1)

1. — — √/ √ — √ — / √ — — √/ √ —
2. — — — / — √ — / √ — — √/ √ —
3. — — √/ √ — √ — / √ — — — / —
4. — — — / — √ — / √ — — — / —

(Type 2)

2. — — — / — √ — / √ — — √/ √ —
3. — — √/ √ — √ — / √ — — — / —
4. — — — / — √ — / √ — — — / —
1. — — √/ √ — √ — / √ — — √/ √ —

The result is that the “compound” type is an arrangement of *ruboī vazns* based on one of the *zarb* rotations and *ruboī vazns*. It appears with various mixed forms in connection with the fundamental and composed *vazns*.

“Mixed” is another type of *ruboī vazn* structure. In this type, the *vazn* arrangements are based on two rhythmic rotations within one of the trees. In other words, the “mixed” type of *ruboī vazns* is built entirely on the structure and form of the *axrab* tree or that of the *ashtar* tree. For example, two rhythmic rotations exist in the *axrab* tree—*axrab makfuf majbub* and *axrab maqbuz makfuf majbub*—and in the *ashtar* tree, *ashtar makfuf maqbuz majbub* and *ashtar maqbuz majbub*. A mixture results from combining the fundamental and composed *vazns*, or two different composed *vazns* from two rotations within one of the two trees. The possibilities for arranging different *ruboī vazns* in the mixed type are even greater than in the compound type; in the compound type, two, three, or four different *vazn* types are only seen in one of the *zarb* rotations and *ruboī vazns*, and in the mixed type, they are seen in two different rotations, making an incalculable number. As an example, we present several *ruboī vazn* arrangements in the mixed type, composed of 2, 3, and 4 different types of *vazn*:

Mixed type

I. Two types of different meters

A. *Axrab* tree

Metric types: 1. *Axrab makfuf majbub* rotation
2. *Axrabi maqbuz abtar* rotation

2 x 2

1. — — √/ √ — — √/ √ — — √/ √ —
1. — — √/ √ — — √/ √ — — √/ √ —
2. — — √/ √ — √ — / √ — — — / —
2. — — √/ √ — √ — / √ — — — / —

3 x 1

1. — — √/ √ — — √/ √ — — √/ √ —
1. — — √/ √ — — √/ √ — — √/ √ —
1. — — √/ √ — — √/ √ — — √/ √ —
2. — — √/ √ — √ — / √ — — — / —

B. *Ashtar* tree

Metric types: 1. *Ashtar majbub* rotation
2. *Ashtar maqbuz majbub* rotation

2 x 2

1. — ♀ — / ♀ — — — / — ♀ — / ♀ —
1. — ♀ — / ♀ — — — / — ♀ — / ♀ —
2. — ♀ — / ♀ — ♀ — / ♀ — ♀ — / ♀ —
2. — ♀ — / ♀ — ♀ — / ♀ — ♀ — / ♀ —

3 x 1

1. — ♀ — / ♀ — — — / — ♀ — / ♀ —
1. — ♀ — / ♀ — — — / — ♀ — / ♀ —
1. — ♀ — / ♀ — — — / — ♀ — / ♀ —
2. — ♀ — / ♀ — ♀ — / ♀ — ♀ — / ♀ —

II. Three types of different meters

A. *Axrab* tree

Metric types: Rotation 1. 1. *Axrab makfuf abtar*
2. *Axrab majbub*
Rotation 2. 3. *Axram ashtar makfuf majbub*

2 x 1 x 1

1. — — ♀/ ♀ — — ♀/ ♀ — — — / —
1. — — ♀/ ♀ — — ♀/ ♀ — — — / —
2. — — ♀/ ♀ — — — / — — ♀/ ♀ —
3. — — — / — ♀ — / ♀ — — ♀/ ♀ —

1 x 2 x 1

1. — — ♀/ ♀ — — ♀/ ♀ — — — / —
2. — — ♀/ ♀ — — — / — — ♀/ ♀ —
2. — — ♀/ ♀ — — — / — — ♀/ ♀ —
3. — — — / — ♀ — / ♀ — — ♀/ ♀ —

B. *Ashtar* tree

Metric types: Rotation 1. 1. *Ashtar makfuf maqbuz majbub*
2. *Ashtar majbub*
Rotation 2. 3. *Ashtar maqbuz majbub*

2 x 1 x 1

1. — ♀ — / ♀ — — ♀/ ♀ — ♀ — / ♀ —
1. — ♀ — / ♀ — — ♀/ ♀ — ♀ — / ♀ —
2. — ♀ — / ♀ — — — / — ♀ — / ♀ —
3. — ♀ — / ♀ — ♀ — / ♀ — ♀ — / ♀ —

1 x 2 x 1

1. — ♀ — / ♀ — — ♀/ ♀ — ♀ — / ♀ —
2. — ♀ — / ♀ — — — / — ♀ — / ♀ —
2. — ♀ — / ♀ — — — / — ♀ — / ♀ —
3. — ♀ — / ♀ — ♀ — / ♀ — ♀ — / ♀ —

III. Four types of different meters

A. *Axrab* tree

- Metric types: Rotation 1. 1. *Axrab makfuf majbub*
2. *Axram axrab makfuf majbub*
Rotation 2. 3. *Axrab maqbuz makfuf majbub*
4. *Axram ashtar makfuf majbub*

Type 1 – 1,2,3,4

1. — — √/√ — — √/√ — — √/√ —
2. — — — / — — √/√ — — √/√ —
3. — — √/√ — √ — / √ — — √/√ —
4. — — — / — √ — / √ — — √/√ —

Type 2 – 3,2,4,1

3. — — √/√ — √ — / √ — — √/√ —
2. — — — / — — √/√ — — √/√ —
4. — — — / — √ — / √ — — √/√ —
1. — — √/√ — — √/√ — — √/√ —

B. *Ashtar* tree

- Metric types: Rotation 1. 1. *Ashtar makfuf maqbuz majbub*
2. *Ashtar majbub*
Rotation 2. 3. *Ashtar maqbuz ahtam*
4. *Ashtar maqbuz majbub*

Type 1 – 1,2,3,4

1. — √ — / √ — — √/√ — √ — / √ —
2. — √ — / √ — — — / — √ — / √ —
3. — √ — / √ — √ — / √ — √ — / √ ~
4. — √ — / √ — √ — / √ — √ — / √ —

2. Type 2 – 2,4,3,1

2. — √ — / √ — — — / — √ — / √ —
4. — √ — / √ — √ — / √ — √ — / √ —
3. — √ — / √ — √ — / √ — √ — / √ ~
1. — √ — / √ — — √ / √ — √ — / √ —

As we can see, the more complex the type of *ruboī vazn* structure becomes, the greater and the more varied become the possibilities for arranging *ruboī vazns*. The compound type has more possibilities than the simple type, and the mixed type more than the compound, so of course, it becomes easier and more interesting to compose *ruboīs* in the compound and mixed types. With more possibilities of *ruboī* meters, the poet has more opportunities for invention and extemporization and can express ideas and opinions more easily.

There are many useful examples of the various *vazn* arrangements in Khayyam's *ruboiyot*. From study and analysis of *vazn* types in Khayyam's *ruboiyot*, it is known that he composed using mainly the compound and mixed types.

Vazns of Khayyam's Ruboiyot

The *Ruboiyot* of Omar Khayyam have been, and will be, published many times by various scholars. The book that we are currently using was published in 1983 by Mirzo Mulloahmadov, literature scholar and doctor of philology. In this book are a total of 540 *ruboiyot* by Khayyam, with one in the “*mustazod*” form.

Actually, it has not been proven which of the *ruboīs* were originally written by Khayyam, but this is another discussion. In this article, we use Mulloahmadov's book as the source. After a comprehensive study of the *ruboiyot* meters in this collection we reached the following results, and we present them to you:

1. The meters of Khayyam's *ruboiyot* are mostly constructed in the *axrab* tree. He used 16 types of *ruboī* meters in total, including eight meters of *axrab makfuf majbub* and eight of *axrab maqbuz makfuf majbub* [n.b., remember that each meter counts as two, because of the two possible endings, long and overlong]:

***Axrab makfuf majbub* rotations**

1. *Axrab makfuf majbub* and *ahtam*
— — √/ √ — — √/ √ — — √/ √ —
2. *Axrab makfuf abtar* and *azall*
— — √/ √ — — √/ √ — — — / —
3. *Axram axrab makfuf majbub* and *ahtam*
— — — / — — √/ √ — — √/ √ —
4. *Axram axrab abtar* and *azall*
— — — / — — √/ √ — — — / —

***Axrab maqbuz makfuf majbub* rotations**

1. *Axrab maqbuz makfuf majbub* and *ahtam*
— — √/ √ — √ — / √ — — √ / √ —
2. *Axrab maqbuz abtar* and *azall*
— — √/ √ — √ — / √ — — — / —
3. *Axram ashtar makfuf majbub* and *ahtam*
— — — / — √ — / √ — — √/ √ —
4. *Axram ashtar abtar* and *azall*
— — — / — √ — / √ — — — / —

It must be said that all of the possible *ruboī* meters that appear in the *axrab maqbuz makfuf majbub* rotations are used in Khayyam's *ruboiyot*. But of the 16 possible types of meters that can be created in the *axrab makfuf majbub* rotations, only eight types were used.

2. In terms of the *vazns* put to use in Khayyam's *ruboiyot*, myriad types of *mizrob* (elision) in the *zarbs* and poetic meters are also seen. In terms of percentages, Khayyam made use of 70% of all of the possible *mizrobs*.

3. All of the three metrical classification types—simple, compound, and mixed—appear in Khayyam's *ruboiyot*. A total of 81 *ruboī* are in the simple type and one is also in the *mustazod* form. In the texts of the simple type, six *ruboī* metric types are seen. Only two metric types of *axrab makfuf abtar/azall* are formed in the *axrab makfuf majbub* rotations, and a total of four types of *axrab maqbuz majbub/ahtam* and *axrab maqbuz abtar/azall* are formed on the basis of the *axrab maqbuz makfuf majbub* rotation.

A total of 82 *ruboī* are built in the compound type, including six *ruboī* according to the model of the *axrab makfuf majbub* rotations and 76 *ruboī* according to the model of the *axrab maqbuz makfuf majbub* rotations. Formations described above (compound type) appear in connection with only two and three types of *vazn* in texts of both rotations, but not in connection with four *vazns*.

A great many of Khayyam's *ruboiyot* are found in the mixed type of *vazn* arrangement. 377 *ruboī* are built in texts of the mixed type in connection with two-, three-, and four-*vazn* types. For example, 198 *ruboīs* have been composed in connection with the two-*vazn* arrangement type in two rotations, and most of them appear in the fundamental *vazns* of those rotations. If 99 *ruboī* are created according to the fundamental *vazns*, 99 will also be in the mold of the composed *vazns*.

According to the model of the three-*vazn* type from the various rotations above, a total of 160 *ruboīs* are composed. In connection with the above, the types of *vazn* arrangement are as many as 85. In texts with the two-*vazn* type, out of a total of 198 *ruboī*, 42 types of *vazn* arrangement are evident. According to the model of the four-*vazn* type, 16 different kinds of arrangement are seen in a total of 19 *ruboīs*.

It must also be remembered that the calculation of proportions differs with respect to various *vazns* in this or that rotation. For example, in the two-*vazn* type models, the arrangement of *vazns* is varied. In one instance it is equal, 2 x 2, and in another instance it is unequal, 3 x 1 or 1 x 3. In texts with three different types of *vazns*, the arrangement can be in various forms, such as 2 x 1 x 1 or 1 x 2 x 1, or 1 x 1 x 2. In texts with four different types of *vazns* the nature of the arrangement differs from that of the others, because each *vazn* is different: 1 x 1 x 1 x 1.

Now, in order to confirm our consideration, we give some examples in existing types and *vazn* arrangements from Khayyam's *ruboiyot*:

Simple type

1. *Axrab makfuf majbub* rotation

Metric type: *Axrab makfuf abtar and azall* [— — √/√ — — √/√ — — — / — or ~]

In kūza ču man ošiқи zore budast,
V-andar talabi rūii nigore budast,
In dasta, ki dar gardani ū mebinī,
Dastest, ki bar gardani yore budast.

Eī voī bar on dil, ki dar ū sūze nest,
Savdozadai mehri dilafrūze nest.
Rūze, ki tu be išq ba sar xohī burd,
Zoe'tar az on rūz turo rūze nest.

2. *Axrab maqbuz makfuf majbub* rotation

Metric types:

1. *Axrab maqbuz [makfuf] ahtam* [— — ♀/ ♀ — ♀ — / ♀ — — ♀ / ♀ ~]

Gardun kamare zi umri farsudai most,
Jaīhun asare zi čašmi poludai most,
Dūzax šarare zi ranji behudai most,
Firdavs dame zi vaqti osudai most.

2. *Axrab maqbuz azall* [— — ♀/ ♀ — ♀ — / ♀ — — — / ~]

Onho, ki ba kori aql darmekūšand,
Haīhot, ki jumla govi nar mejūšand.
On beh, ki libosi ablahī darpūšand,
K-imrūz ba aql tarra menafrūšand.

Compound types

A. With two different meters

1. *Axrab makfuf majbub* rotation

Metric types: 1. *Axrab makfuf majbub* (or *ahtam*) [— — ♀/ ♀ — — ♀/ ♀ — — ♀/ ♀ — or ♀ ~]

2. *Axrab makfuf abtar* [— — ♀/ ♀ — — ♀/ ♀ — — — / —]

3 x 1

Dar otaši sūzanda agar ahl buvad,
On otaši sūzanda bar ū sahl buvad.
Bo mardumi noahl mabodat sūhbat,
K-az har či batar sūhbatī noahl buvad.

1 x 3

Daryob, ki az rūh, judo xohī raft,
Dar pardai asrori fano xohī raft.
Maī nūš, nadonī zi kujo omadaī,
Xuš boš, nadonī, ki kujo xohī raft.

2. *Axrab maqbuz makfuf majbub* rotation

Metric types:

1. *Axrab maqbuz makfuf majbub* (or *ahtam*) [— — ♀/ ♀ — ♀ — / ♀ — — ♀ / ♀ — or ♀ ~]

2. *Axrab maqbuz azall* [— — ♀/ ♀ — ♀ — / ♀ — — — / ~]

3 x 1

Onho, ki kuhan šudandu onho, ki navand,
Har yak pai yakdigar yakoyak bišavand.
V-in mulki kahon ba kas namonad jovid,
Raftandu ravemu boz oyandu ravand.

1 x 3

Huš dor, ki rūzgor šūrangez ast,
Emin manišin, ki teği dabron tez ast.
Dar komi tu gar zamon lavzina nihad,
Zinhor furū mabar, ki zahromez ast.

B. With three different meters

1. *Axrab makfuf majbub* rotation

Metric types: 1. *Axrab makfuf ahtam* [— — √/√ — — √/√ — — √/√ ~]
2. *Axrab makfuf azall* [— — √/√ — — √/√ — — — / ~]
3. *Axram axrab azall* [— — — / — — √/√ — — — / ~]

1 x 2 x 1

Sarmast ba maixona guzar kardam dūš,
Pire didam mastu sabūe bar dūš.
Guftam: “Zi Xudo šarm nadorī, eī pir?”
Gufto, ki “Karim ast Xudo, boda binūš!”

2. *Axrab maqbuz makfuf majbub* rotation

Metric types: 1. *Axrab maqbuz makfuf ahtam* [— — √/√ — √ — / √ — — √/√ ~]
2. *Axrab maqbuz azall* [— — √/√ — √ — / √ — — — / ~]
3. *Axram ashtar azall* [— — — / — √ — / √ — — — / ~]

1 x 2 x 1

Dar dīl natavon daraxti andūh, nišond,
Hamvora kitobi xurramī boyad xond,
Maī boyad xūrdū komi dīl boyad rond,
Paīdost, ki čand dar jahon boyad mond.

Neither rhythmic rotations nor *ruboīs* are found in connection with four types of meter.

Mixed type

A. Two metric types from two rotations

Metric types: Rotation 1. 1. *Axrab makfuf majbub (or ahtam)*
[— — √/√ — — √/√ — — √/√ — or √~]
Rotation 2. 1. *Axrab maqbuz makfuf majbub (or ahtam)*
[— — √/√ — √ — / √ — — √/√ — or √~]

2 x 2

In qofilai umr ajab meguzarad,
Daryob dame, ki bo tarab meguzarad.
Soqī, ġami fardoi qiyomat čī xurī?
Peš or piyolaro, ki šab meguzarad.

2 x 2

Aknun, ki zi xušdīlī ba juz nom namond,
Yak hamdami puxta juz man xom namond.
Dasti tarab az soġari man bozmagir,
Imrūz, ki dar dast ba juz jom namond.

B. Three metric types from two rotations

- Metric types: Rotation 1.** 1. *Axrab makfuf majbub (or ahtam)*
[— — √/ √ — — √/ √ — — √/ √ — or √ ~]
- Rotation 2.** 2. *Axrab maqbuz makfuf majbub (or ahtam)*
[— — √/ √ — √ — / √ — — √/ √ — or ~]
3. *Axrab maqbuz azall (or abtar)*
[— — √/ √ — √ — / √ — — — / — or ~]

2 x 1 x 1

Maī xur, ki turo bexabar az xeš kunad,
Xun dar dili dušmani badandeš kunad.
Hušyor budan či sud dorad, juz on-k
Z-andešāi poyon dili tu reš kunad.

1 x 2 x 1

Yoron, ču ba ittifoq mi`od kuned,
Xudro ba jamoli yakdigar šod kuned.
Soqī ču maī muğona bar kaf girad,
Bečora falonro ba duo yod kuned.

C. Four metric types from two rotations

- Metric types: Rotation 1.** 1. *Axrab makfuf ahtam* [— — √/ √ — — √/ √ — — √/ √ ~]
2. *Axrab makfuf azall* [— — √/ √ — — √/ √ — — — / ~]
- Rotation 2.** 3. *Axrab maqbuz azall* [— — √/ √ — √ — / √ — — — / ~]
4. *Axrab maqbuz makfuf ahtam* [— — √/ √ — √ — / √ — — √/ √ ~]

1 x 1 x 1 x 1 (each different)

Davre, ki dar ū omdanu raftani most,
Onro na bidoyat, na nihoyat paidost
Kas hej nagufta andar in ma`nī rost,
K-in omdan az kujovu raftan ba kujost.

Metric types:

- Rotation 2.** 1. *Axrab maqbuz abtar (azall)* [— — √/ √ — √ — / √ — — — / — or ~]
- Rotation 1.** 2. *Axrab makfuf abtar (azall)* [— — √/ √ — — √/ √ — — — / — or ~]
- Rotation 2.** 3. *Axrab maqbuz makfuf majbub (ahtam)*
[— — √/ √ — √ — / √ — — √/ √ — or √ ~]
4. *Axram ashtar abtar (azall)* [— — — / — √ — / √ — — — / — or ~]

1 x 1 x 1 x 1 (each different)

Gūyand maro, ki maīparastam, hastam,	Soğar pur kun, ki barfgun omd rüz,
Gūyand maro fosiqu mastam, hastam.	Z-on boda, ki la`l ast, az ū rang omūz.
Dar zohiri man nigoh bisyor makun,	Bardor du udrovu majlis afrūz
K-andar botin čunon ki hastam, hastam.	Yak ud bisoz v-on digar ud bisūz.

To summarize, Khayyam's *ruboiyot* are only formed on the basis of the *axrab* tree, and of the 24 possible meters, he used only 16. His *ruboiyot* are written in simple, compound, and mixed formats. Out of 540 *ruboīs* in Mulloahmadov's collection, approximately 70% are in a mixed form.

Notes

¹ Trans. note: Most varieties of the *ruboī* meters can be accounted for, however, through simple substitutions of — — ♀ ♀ with — ♀ — ♀. See L.P Elwell-Sutton, *The Persian Metres* (Cambridge: Cambridge University Press, 1976), 59–61; and *ibid.*, “‘Arūz,” in *Encyclopaedia Iranica* (1986), <http://www.iranicaonline.org/articles/aruz-the-metrical-system> (accessed 19 January 2016).

² Trans. note: Referring to the Arabic letters *fa*, *ʿain*, and *lam*, used by grammarians and applied by prosodists to formulas representing feet. The formulas are commonly known as *afāʾil* (*afoil* in the transliteration from Tajik).

³ Trans. note: *Zarb*, or rhythm, is associated with words for hitting, striking, beating, etc. *Usul*, the plural of the Arabic *asl*, has several meanings; in this text, it refers either to the “method” of doing something or to specific rhythmic modes. *Zarbs*, as specific rhythmic patterns, are represented with *atonin*, *usul* rhythmic modes with *bum* and *bak*, and poetic meters with *afoil*. In this paragraph and the following one, Abdurashidov is explaining that rhythmic modes (*usul*) are built from performed rhythms (*zarbs*) as well as poetic meters (*vazns*).

⁴ Trans. note: Abdurashidov uses the term *mizonband*, “bound measure,” to refer to time signatures. Many European musical terms entered Tajik musical discourse via the Soviet educational system and scholarship.

⁵ In Tajik traditional music, the *ruboī* musical type is very famous. *Ruboī* music is typically performed in 7/8, 6/8, or 5/8. However, this musical type's main *usul*, *ufar*, is in 6/8. This shows that the musical *ruboī* is based on the poetic *ruboī*, because the rules of composing *ruboī* meters (*vazns*) are correlated with both the musical [i.e. instrumental] performance of *ruboī* and the singing of *ruboī* poetry.

⁶ Trans. note: Basic (*solim*) *rajaz* is — — ♀ —. *Matvī* means a shortening of the second long syllable; thus, *rajaz matvī* is — ♀ ♀ —. *Maxbun* is a shortening of the first long syllable; thus, *rajaz maxbun* is ♀ — ♀ —.

⁷ Trans. note: In these diagrams, the reader should pay special attention to *davri* 4 (rotation 4), the outermost concentric ring of the circle, which will be explained in the next section as fundamental to the establishment of *ruboī* meters. With rotations, the primary foot can be transformed (e.g., from *rajaz* to *hajaz*).

⁸ Trans. note: *Makfuf* is a shortening of the final long syllable of a foot; thus *rajaz* [— — ♀ —] *makfuf* is — — ♀ ♀, *ramal* [— ♀ — —] *makfuf* is — ♀ — ♀, *xafif* [— ♀ — — / — — ♀ —] *makfuf* is — ♀ — ♀ / — — ♀ ♀, and *mujtass* [— — ♀ — / — ♀ — —] *makfuf* is — — ♀ ♀ / — ♀ — ♀.

⁹ Trans. note: From this point on, the reader may refer to Abdurashidov's table in the section “The *Atonin* of *Zarb* and the *Afoil* of *Vazn* in the *Ruboī*,” which gives the feet within the *hazaj bahr* (basic, or *solim*, *hazaj* = ♀ — — —) that will be used to construct the rest of the applicable meters in the article. Thus *hazaj axrab makfuf* is the *axrab* form of *hazaj* (elision of first short syllable and shortening of final long syllable = — — ♀) + the *makfuf* form (shortening of final long syllable = ♀ — — ♀), or — — ♀ / ♀ — — ♀.

¹⁰ Trans. note: *Majbub* is the elision of the last two long syllables, thus the *majbub* form of *hazaj* is ♀ — (from ♀ — — —).

¹¹ Incidentally, it must be said that the *ashtar* tree was not until now known in *arūz* versification. For this reason, no one has ever created a poem in this tree of *ruboī* meters. Only the scholar and *arūz*-master Subhon Davronov has brought out an exemplary hemistich for the purpose of

recognizing and feeling each *vazn* of the *ashtar* tree and its variants [*mizrob*—rhythmic compositions created by combining short and long durations into longer values]. This manuscript is now stored in the Kamina archives (Davronov 1998).

¹² Trans. note: *Musamman* refers to the number of feet in the meter. For the purposes of this article, readers can construct the meters in this table beginning with the third element in each title.

¹³ In *al-Mū`jam*, Shamsi-Qays wrote: “And Khoja Imom Hasani Qatton (1073-1154) ... from Khorāsān summarized that *arūz* versification and *dubaīti* meters (meaning, *ruboī*) are constructed in two trees. In this writing I am involved in the same inquiry ... to approach understanding of the qualities of composition as soon as possible” (Shams-i Qays 1991:97).

¹⁴ Trans. note: This paragraph alludes to the conventional division of *ruboī* meters into *axrab* and *axram* trees, as opposed to the *axrab* and *ashtar* trees described in this article. In Abdurashidov’s table, the twelve meters beginning with *axrab* are I.A.1, I.B.1, I.B.2, I.B.4, II.A.1, and II.B.1, and the twelve meters beginning with *axram* are I.B.3, I.B.5, I.B.6, I.B.7, II.B.2, and II.B.3.

Abdurashidov’s analysis is based on the idea that the *axram* meters are not themselves fundamental meters but are rather constructed by joining short syllables/attacks in the third and fourth positions of a foot.

¹⁵ Trans. note: *Mizrob* generally refers to a plectrum, and can also refer to a stick or hammer used to strike a zither or drum; note the relation of *zarb* to *mizrob*. In this section, *mizrob* refers to metrical elisions or rhythmic variants that are created through the combination of long and short units.

¹⁶ We loosely use the term *atonin* to mean the articulation of the “na-ta-nan”-s of rhythm.

¹⁷ Trans. note: In other words, if the short beats have already been connected in forming composed meters, one cannot further connect beats to create rhythmic patterns with $1\frac{1}{2}$ (long+short) values.

¹⁸ Trans. note: Note that compound *ruboīs* cannot be formed within the *ashtar maqbuz majbub* circle, since it only contains the basic meter.

References

- Abdurashidov, Abduvali. 1994. “Muzykal’nyĭ ritm v kontekste vostochnoĭ poezii.” In *Proceedings of the International Symposium “Muzyka turksix narodov.”* Almaty.
- . 1999. *Avzoni ash`ori Shashmaqom*. Dushanbe: Farhangi faroghat.
- . 2001. *Omūzishi avzoni she`r va musiqī (Arūz va musiqī)*. Dushanbe: Adliya.
- . 2004. *Furūghi mehr (She`ru surudho baroi kūdakon)*, Part One. Dushanbe: Mir Poligrafii.
- Aminov, Azim. 1988. *Zhanr rubai i sovetskaya liriko-filosovskaya poeziya*. Dushanbe: Donish.
- Azizi, Faroghat. 2009. *Makom i falak kak yavleniya professional'nogo traditsionnogo muzykal'nogo tvorchestva tadzhikov*. Dushanbe: Adib.
- Babaev, Elxan. 1990. *Ritmika azerbaïdzhanskogo dastgaxa*. Baku: Ishyg.
- Davronov, Subhon. 1997. “Misolhoi she`rī dar vazni ‘shajarai ashtar’-i ruboī.” Dushanbe. Unpublished manuscript.
- . 1992. *Omūzishi vazni she`ri tojik*. Dushanbe: Maorif.

- Frolov, Dmitrii V. 1991. *Klassicheskiĭ arabskiĭ stix: Istoriya i teoriya aruda*. Moscow: Nauka.
[English translation: Frolov, Dmitry. 2000. *Classical Arabic Verse: History and Theory of 'Arūd*. Leiden: Brill.]
- Frolov, Ivan T., et al. 1989. *Vvedenie v filosofiĭu: Uchebnik dlya vysshix uchebnyx zavedeniĭ: v dvux chastyax*. Chast' 2. Moscow: Izd-tvo polit. lit-ry.
- Jakobson, Roman. 1987. *Raboty po poetike*. Introduction by Vyacheslav V. Ivanov; edited by Mikhail L. Gasparov. Moscow: Progress.
- Jāmī. 1960. *Traktat o muzyke*. Translated from the Persian by Aleksander N. Boldyrev; edited by Viktor M. Beliaev. Tashkent: Izd-vo Akademii nauk Uzbekskoi SSR.
- Kharlap, Miron G. 1986. *Ritm i metr v muzyke ustnoi traditsii*. Moscow: Muzyka.
- Khayyam, Omar. 1983. *Ruboiyot*. Transliterated by Mirzo Mulloahmadov. Dushanbe: Donish.
- Kholopova, Valentina N. 1980. *Muzykal'nyi ritm*. Moscow: Muzyka.
- Likhachev, Dmitrii S. 1979. *Poetika drevnerusskoi literatury*. Moscow: Nauka.
- Schelling, Friedrich Wilhelm Joseph von. 1966. *Filosofiya iskusstv*. Moscow: Mysl'. [Russian translation of *Philosophie der Kunst*.]
- Semyonov, A. A. 1946. *Sredneaziatskiĭ traktat po muzyke Darvesh Ali Changi 17v*. Short edition. Tashkent.
- Shams-i Qays. 1991. *al-Mū'jam* [Mu'jam fi ma'āyir ash'ār al-'Ajam]. Introduction, notes, and preparation by Urvatullo Toirov. Dushanbe: Adib.
- Sirus, Bahrom. 1963. *Arūzi tojikī*. Dushanbe: Nashriyoti davlati Tojikiston.
- Toirov, Urvatullo. 1991. *Farhangi istilohoti arūzi ajam*. Dushanbe: Maorif.
- Tūsī, Naṣīr al-Dīn Muhammad ibn Muhammad (1201–1274). 1992. *Me'yor-ul-ash'or*. Prepared by Urvatullo Toirov, M. Abdulloev, and Rahmuddini Jalol. Dushanbe: Oriyono.
- Vahīdiyān Kāmyār, Taqī. 1993. *Funun va sanoe'i adabī*. Transliterated from the Persian alphabet and reprinted by Urvatullo Toirov and Saidmurodi Saidalī. Dushanbe.
- Vargha, Balázs, Judit Dimény, and Éva Loparits. 1981. *Yazyk, muzyka, matematika*. Translated by Yuliy Danilov. Moscow: Mir. [Translation of *Nyelv, zene, matematika*.]
- Vasina-Grossman, Vera A. 1972. *Muzyka i poeticheskoe slovo. Chast' 1. Ritmika*. Moscow: Muzyka.