Musical Rhythm in Persian Poetic Meters
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There are more than 400 different metrical patterns in Persian poetry (Vahidian-Kamyar, 1991). Several studies have addressed the subject of describing and classifying these patterns from a variety of scholarly perspectives. Traditionally, Al-Khalil’s (718-786) system of describing Arabic meters has been applied to Persian meters (Elwell-Sutton, 1976: 1), in which each meter is composed of certain patterns of “feet” that go through a number of modifications and alternations. Khanlari (1958) suggested a set of new patterns of feet that he believed to be more compatible with the actual arrangements of Persian words in verses. Farzad (1967) and Utas (1994) also proposed their own methods of parsing the arrangements of metrical patterns into feet. On the other hand, Elwell-Sutton (1976) proposed that since stress has no role in formation of metric patterns in Persian, we cannot really speak of feet, and the meters are simply defined as certain sequences of syllables. More recently, Musavi and Tabibzadeh (2013) provided an analysis of Persian metric patterns based on a generative metrics approach. In general, however, little direct attention has been paid to the intriguing correspondence of Persian poetic meters with musical rhythm. In the current study, we suggest a method of classifying Persian metrical patterns based on translating them into different arrangements of musical bars.

The quantitative nature of Persian poetry requires certain sequences of light (CV), heavy (CV:, CVC) and superheavy syllables (CV:C, CVCC, CV:CC) to form metrical patterns (Najafi, 1973). Adopting a moraic conception of the syllable (Hyman, 1985), the light syllables consist of one mora, heavy syllables of two moras and superheavy syllables of three moras. Assuming that Persian syllable lengths (in terms of moras) can be translated into note durations (in terms of relative length values) by equating each mora with an eighth note (μ = ♪), the three types of Persian syllables can be converted to musical note durations as follows:

L = ♪  H = ♩  S = ♩.

Analyzing the sequences of note durations from 30 main meters which cover more than 98 percent of classical Persian poems (Vahidian-Kamyar, 1991) shows that they can be categorized into four main time signatures: 6/8 (Figure 1.a), 4/4 (Figure 1.b), complex time signatures (Figure 1.c), and multiple complex time signatures (Figure 1.d).

Figure 1. Examples of metric patterns constituting a 6/8 time signature (a), a 4/4 time signature (b), a complex time signature (c), and a multiple complex time signature (d).
The alternations and constraints in formation of the metric patterns (as described by Najafi, 1973) will be explained in terms of the regularities of musical rhythm. Also the implications of the study for the controversial topic of defining feet in Persian meters, as well as for the prosodic structure of Persian will be discussed.

References