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DAWR (2)

DAWR (Ar. and Pers. “circle”), a term applied to scales and also to rhythmic cycles, both commonly diagramed as circles (*dāʾera*, *dawr*) in the classical musicology of Persian, Arab, and Turkish groups. Such diagrams are particularly appropriate for representing both the cyclical nature of the scales, which characteristically return to their points of departure an octave higher, and the periodic nature of rhythmic formulas, defined by the return of identical patterns at specific intervals.

The scales of *maqām*s, or cycles (*adwār*, *šodūd*), were often represented by circles with eight notes indicated by letters of the alphabet distributed around the circumference, for example, the ninety-one cycles described by ʿAbd-al-Qāder Marāḡī in 818/1415. In some scales notes separated by a perfect fifth were linked by lines, so that it was possible to evaluate easily the degree of harmony (Marāḡī, 1366 Š./1987, pp. 82-85, 87-94; Ḥosaynī, pp. 52-57). Rhythmic cycles (*adwār-e īqāʿ*) were also represented by circles, with dots and letters or syllables distributed around the circumference. By tracing the circumference of the circle with the finger and pronouncing the syllables in turn, it was possible to produce a complete rhythmic formula, ending at the point of departure (Marāḡī, 1366 Š./1987, pp. 217-22). This type of representation is still in use in certain musical traditions. According to Ṣafī-al-Dīn Ormavī (d. 693/1294) and Marāḡī, the syllables were disposed in this fashion in order to symbolize the cyclical nature of the rhythmic paradigm, usually called “cycle” (*dawr*) or “rhythmic cycle” (*dawr-e īqāʿ*) but sometimes “principles” (*oṣūl*) or “metric principles” (*baḥr-e oṣūl*; cf. *Maʿrefat*, p. 195).

The scale.

The term *dawr* seems to have been applied to the scale for the first time in a musicological context in the work of Ṣafī-al-Dīn. In his *Ketāb al-adwār* (650/1252) and *Resālat al-šarafīya* (665/1267) he elaborated on the works of Abū Yūsof Yaʿqūb Kendī (ca. 185-252/802-66), Fārābī (d. 339/950), and Avicenna (d. 428/1037), notably in listing and systematically analyzing the scales and modes then in use and arranging them according to a new system. The information and description of method provided in these works, particularly in connection with the modal scales, were simply repeated by the majority of later authors, particularly Qoṭb-al-Dīn Maḥmūd Šīrāzī (634-710/1236-1311) in his Persian encyclopedia *Dorrat al-tāj le-ḡorrat al-dobbāj*; the unknown author of *Šarḥ-e Mawlānā Mobārakšāh bar adwār* (777/1375); Marāḡī in *Jāmeʿ al-alḥān* and the abridgment *Maqāṣed al-alḥān* (817/1414); and Zayn-al-ʿĀbedīn Moḥammad Ḥosaynī in *Qānūn-e ʿelmī wa ʿamalī-e mūsīqī* (ca. 905/1500).

After having established a basic scale of seventeen intervals Ṣafī-al-Dīn derived every possible tetrachord (*jens*) according to rigid and restrictive rules, then combined them in order to construct a number of theoretical scales. He thus obtained and named seven “types” (or divisions) of the fourth and twenty-eight of the fifth, among which were several that were actually played (*Šarḥ*, pp. 288-89, 300), the others being purely theoretical. He reduced the divisions of the fifth to twelve by suppressing defective examples and repetitions, presenting a table in which each of the seven divisions of the fourth was linked to each of the twelve divisions of the fifth. He thus obtained a total of eighty-four octave scales, called *adwār* (cycles) or *šodūd* (from *šadd* “tuning”), forty-three of which were consonant according to his criteria, seventeen semidissonant, and twenty-four dissonant. Qoṭb-al-Dīn added seven consonant cycles to this basic repertoire. Later the commentator on Ṣafī-al-Dīn’s *Ketāb al-adwār* added forty-nine theoretical cycles (*Šarh*á, pp. 344-50), four of which he designated as playable (Māhūrī, Bayḍa, Haḏra, Farah; he thus established forty-eight consonant cycles, including those already mentioned, but this time with their full octave spans.

The forty-eight cycles described in the *Šarḥ-e Mawlānā* can be divided into three categories, reflecting different conceptual approaches. The first consisted of twelve *šodūd*, later known as *maqāmāt* (p. 376): ʿOššāq, Navā, Būsalīk (Abū Sālīk), Rāst, ʿErāq, Eṣfahān, Zīrafkand, Bozorg, Zangūla, Rahāvī, Ḥosaynī, and Ḥejāzī. The second category included the six *āvāz*es (*āvāzāt*): Gavešt (Ar. Kowašt), Gardānīya, Nowrūz, Salmak, Māya, Šahnāz, the last three

of which were not mentioned by Ṣafī-al-Dīn in his *Resāla-ye šarafīya* but are included in the *Šarh*á (pp. 390-91). By adding the first three, along with a second form of Ḥejāz, Nahoft, and Moḥayyer-Ḥosaynī, to the twelve *maqām*s, the author of the *Šarḥ* brought the total to eighteen important modal scales (actually seventeen, as Ḥejāz was included twice), all of which had been cited by Ṣafī-al-Dīn (1938, pp. 127-36). The third category consisted of five branch modes, or *šoʿba*s (pl. *šoʿab*), generally similar to the *āvāz*es (cf. p. 131): Gardānīya, Panjgāh, Salmak, Moḥayyer, and Māhūrī. The author of the *Šarḥ* also mentioned "composite" modes (*mo-rakkabāt*), though he gave only one example. Six of the *maqām*s were identified as *mawājeb* (*mawājeb*/*asÂābeʿ-e setta*), or fingered (pp. 466-68). Finally, the term *baḥr* (pl. *boḥūr*) was applied to modes resulting from displacement of the tonic in the scale of Rāst: Dogāh (tonic on the second note), Segāh (tonic on the third note), Čahārgāh, Panjgāh, and so on (p. 109).

Qoṭb-al-Dīn Šīrāzī, a disciple of Ṣafī-al-Dīn and the first compiler of his work, also provided an explanation of the cycles in *Dorrat al-tāj*, but he differed from his teacher on certain points. It is clear that not all the cycles named by Ṣafī-al-Dīn were in use, for Qoṭb-al-Dīn mentioned only twenty-nine.

In the *Šarḥ*, on the other hand, each of the forty-eight cycles or modal scales (*adwār*) was named. Furthermore, with two exceptions (the *āvāz*es Salmak and Māya), they were also cited by type, or genre (*ajnās*, *boʿd*): *āvāz*, *mawājeb*, and so on. The individual names were assigned by the author, who nevertheless recognized that masters of the art also "could very well have given them names" (p. 392). Among the forty-eight cycles in the theoretical repertoire the names of thirty-two were of Persian, sometimes of pre-Islamic origin. In the *Šarḥ* the cycles themselves were explained in detail, but the explanations must be interpreted with care because of distortions owing to the constraints of the method used. Furthermore, no information was given on the internal structure of the modes; they were treated simply as scales, and even the tonics were not specified, though their links and degrees of relationship were often mentioned.

In elaborating Ṣafī-al-Dīn's method Marāḡī, like Qoṭb-al-Dīn, arrived at ninety-one cycles, which he classified as *maqām*s, *āvāz*es, and *šoʿab*. The twelve *māqām*s were designated *adwār* or *šodūd* by the Arabs and *māqam*s or *parda* (frets) by the Persians, "some of them counting eight notes, others nine" (1356 Š./1977, p. 57). Marāḡī warned against errors in naming the scales (pp. 57, 61) and claimed to have reestablished the truth, especially in relation to Qoṭb-al-

Dīn, whom he considered a dilettante (p. 65). The six *āvāz*es were identical with those of Ṣafī-al-Dīn, and he also mentioned twenty-four *šoʿab*. This new classification, in which the *maqām* and *šoʿba* (sometimes called *ʿoṣūl* and *forūʿ* respectively) were distinguished, marked a turning pont in modal organization. It was repeated by the majority of later authors (cf. Shiloah), notably the 15th-century author of a treatise dedicated to the Ottoman sultan Moḥammad II (848-86/1444-81, with interruption), often identified as Fatḥ-Allāh Moʾmen Šīrvānī, and ʿAbd-al-Ḥamīd Lāḏeqī (ca. 1500), to whom *Ketāb al-fatḥīya* is attributed, as well as in two nonscientific Persian works, *Resāla-ye mūsīqī-e bahjat al-rūḥ* (ca. 1600; apocryphally attributed to Ṣafī-al-Dīn) and the anonymous *Maʿrefat-e ʿelm-e mūsīqī*. In the Safavid period the science of intervals and even the concepts of cycle, genre, scale, and transposition thus disappeared as major preoccupations of Persian musicians; even Moḥammad-Naṣīr Mīrzā Forṣat Šīrāzī (d. 1338/1920), in his *Boḥūr al-alḥān*, did not venture the slightest explanation.

Rhythmic cycles.

Notation of rhythmic cycles. Conjoint or fundamental rhythm (*żarb al-ʿaṣl*) consists of simple beats at regular intervals without any accent. According to Avicenna, “certain people condemn conjoint rhythm, whereas others do not reject it but do not recognize it as a kind of rhythm. All the old melodies of Khorasan and Persia are based on conjoint rhythm, because this rhythm is equal and because it regularizes the soul . . . all the disjoint rhythms are variatons of this fundamental rhythm” (cited by Šīrvānī, p. 166). Farābī considered the basic definition of rhythm to be a series of regularly spaced beats, the last of which was followed by a *disjunction*, a silence, for example, *ta ta ta*/*ta ta ta*. He developed and introduced about twenty variations, encompassing all the known rhythmic patterns of his time and taking actual musical practice into account (Sawa, p. 4).

The measure of time, indispensable to the expression of rhythm, is based on the science of metrics. The metric units could be represented in three basic ways. In the first, “time A” (*zamān-e alef*), the simple number of beats (*naqra*) was noted, eventually by means of the syllable *ta*, equivalent to one beat. The second consisted of alphabetical letters (Marāḡī, 1366 Š./1987, p. 214). The third method involved various syllabic systems: *sabab*, or “time B” (*zamān-e be*), conventionally represented by the syllable *tan* (–, two beats); *watad*, or “time J” (*zamān-e jīm*), represented by *tanan* (◡–, three beats); the lesser *fāṣela*, or “time D” (*zamān-e dāl*), represented by *tananan* (◡◡–, four beats); the greater *fāṣela*,

or “time Ḥ” (*zamān-e ḥe*), represented by *tananan* (ـــــ, five beats). The *t* of each syllable corresponded to an accented beat, the other letters indicating only the length of the interval separating one beat from the next. The transcription *tananan tan* (pronounced *ta a ta*) was used instead of *tan tan tan* (pronounced *ta ta ta*) when the second beat was not accented. Rhythmic markers (*afāʿīl*) like *fāʿelon*, *fāʿelaton*, and the like were also used, but this method of representation disappeared after the lifetime of Marāgī.

Ṣafī-al-Dīn described the rhythmic cycle known as “the first Ṯaqīl” as “a series of beats separated by rests, some of them longer than others. The whole series can be encompassed in a cycle of sixteen beats separated by equal intervals of the value ‘a.’ . . . You can drop six beats and include only five. Between the first and the second there will thus be a rest J (= three beats), then another between the second and third; an interval D (= 4 beats) separates the third accented beat from the fourth; an interval B (= two beats) will separate the fourth from the fifth and another interval D (= four beats) the fifth from the first, in those instances in which the cycle is repeated” (Šīrvānī, pp. 165-66).

Ḥosaynī (p. 67) described the same cycle: “In the quantity of beats in the cycles of the first Ṯaqīl, one can pronounce eight heavy *sabab*s (two units), which are equivalent to sixteen beats (*naqra*). Of these eleven are silent, and five are played. In order to explain better, in place of these eight *sabab*s, two *watad*s (*tanan* = three beats), two *fāṣela*s (*tananan* = four beats), and one *sabab-e ḵafīf* (*tan* = two beats) have been substituted in this way: *tanan tanan tananan tantananan*.

The old rhythmic cycles, and sometimes new ones as well, were characterized by three (sometimes four) variations, based on tempo, each form containing double the number of beats in the preceding: Ṯaqīl (modern *kabīr*), slow; Wasaṭ, twice as fast; Ḵafīf (modern *ṣagīr*), four times as fast; and eventually Sarīʿ, eight times as fast. These different cycles are represented appropriately by concentric circles, the inner circle representing the shortest. In late treatises they are related to a typology of listeners: the old, the young, and infants or people with white, swarthy, and dark skin (Ṣafī-al-Dīn, 1346 Š./1967; Rajabov, pp. 64, 91).

According to the *Šarḥ* (pp. 517-18), several cycles were played sequentially during a composition, but care was taken to ensure that within each cycle each note in the melody was of identical duration. In order to avoid mistakes in these combinations, the author established a table of proportions among the

eight basic rhythms. As fractional relations had thus been developed, the science of rhythm, of metric intervals, converged with that of musical intervals.

Evolution. In the course of the ages the notation of rhythm has passed through several stages and has been perfected to the point at which theories and analyses of meter have been entirely dropped, while the descriptions have become more pragmatic. In the later writings (e.g., *Bahjat al-rūh*á) the distinction between low-pitched (*bam*) and high-pitched (*zīr*) strokes was taken into account; they are essential elements in the physiognomy of a rhythmic cycle. Fārābī had already distinguished three types of accents, that is loud, medium, and soft (*qawī*, *motawaṣṣeṭ*, *layyena*, respectively; Sawa, pp. 4-10), corresponding in a general way to the different timbres. Similarly Marāgī described the mnemonic gestures that in modern times are linked with playing the *naqqāra* (small drum) with flats and sharps. No author, however, explained the rhythmic cycles themselves according to their characteristic timbres and dynamics. According to Rodolphe d'Erlanger (*Šarḥ*, p. 609), a preliminary effort at such a dynamic articulation may be reflected in what authors, beginning in the late 14th century, designated the "fundamental cadence of the cycle" (*żarb al-ʿaṣl*, but in a different sense from the conjoint rhythm or series of beats mentioned above). This cadence consisted in accentuation of the first beat of the cycle and of one other beat, generally located in the last third of the cycle.

It is significant that the methods of analysis and technical terms used to describe rhythm in early sources are no longer in use in Persia, though they remain current in neighboring cultures. The concept of rhythm in the true sense has been borrowed directly from French, although the more general notion of *wazn* (measure) is also in use. This "decadence" was already noticeable in the late work *Bahjat al-rūḥ*, where the older term *naqra* had been replaced by the more ambiguous *żarb*, which sometimes means beat in the sense of striking and at other times a rhythmic cycle. For the extremely analytical and relatively simple perception of the early writers, a doubtless richer but less precise global vision has been substituted. After the revival of Persian music at the beginning of the 19th century Persian rhythmic structure was thoroughly revised, with the loss of certain features that have been preserved in the Turkish and Arabic traditions: long periods (of twelve, sixteen, twenty-eight, or more intervals), asymmetrical or halting rhythms (*aqsaq*, *lang*, with five, seven, nine, ten, thirteen, or more beats), the playing of

several different formulas in a single composition (e.g., *zanjīr*, *żarbayn*), and the identification of each formula by name.

Fundamental rhythms. Fārābī, following Kendī (d. 256/870), described the "fundamental Arab rhythms" (*Ketāb al-mūsīqī al-kabīr*, in d'Erlanger, 1935-40, p. 40), applying analytical principles from classical metrics. The result was seven formulas and several derivations that could be expanded into cycles of three, four, and five beats and their multiples. Their names (e.g., Hazaj, Ramal, Ḵafīf, Ṯaqīl) were drawn from prosody. These names, multiplied and varied according to the needs of the music, recur in the headings to all chapters on rhythm in later theoretical works.

Fārābī emphasized that these seven formulas did not encompass the entire diversity of rhythms in use in his time. Later authors did indeed mention other formulas, a number of which were typically Persian. According to Marāḡī (1366 Š./1987, pp. 221-22), Fāḵtī was known only to Persians (though it was no longer very common); a form of Ṯaqīl, or Čahār Żarb, was attributed to an Azeri musician (*Šarḥ*, p. 503): "The original name (of Ṯaqīl) in Persian was Hargapūter" (sic; *Šarh*á, p. 472); "it is called Barafšān among the Persians" (Šīrvānī, p. 165). According to Lāḏeqī (p. 473), "some musicians of this period" had given it the name *parafšān* "beating of wings" and had added one beat to it. Among the people of Tabrīz Čanbar was the same as light Hazaj, that is, in 6/8; "the majority of the melodies of the people of Tabrīz are in this rhythm" (Marāḡī, 1366 Š./1987, p. 221; Lāḏeqī, p. 477).

The most important works written after the time of Ṣafī-al-Dīn and including new information on rhythmics were those of Marāḡī, Šīrvānī, and Lāḏeqī and finally *Bahjat al-rūḥ* and *Resāla-ye mūsīqī* by the last great master at the Safavid court, Amīr Khan Kawkabī Gorjī (ca. 1700; Dānešpāžūh, pp. 170-75). Marāḡī added to the old cycles (which he simply incorporated from the work of Ṣafī-al-Dīn without adding anything original) a Čahār Żarb and two Torkī ʿAṣl and mentioned that there were at least twenty other cycles, "the explanation of which would be too long" (1356 Š./1977, p. 46; 1366 Š./1987, p. 223). Nevertheless, he then presented five that he had "composed" (*eḵterā*ʾ), including a Żarb-al-Fatḥ of fifty beats, composed in celebration of the Jalāyerid "conquest" of Tabrīz by Ḡīāṯ-al-Dīn Shaikh ʿAlī, and Meʾatayn, a cycle of 200 beats (1366 Š./1987, pp. 227-28). These cycles were repeated by Šīrvānī, whose inventory hardly differed from that of Marāḡī. Lāḏeqī also cited them, but, except for Żarb-al-Fatḥ, he described them as no longer in use, without mentioning their author.

Lāḏeqī, who doubtless represented the Ottoman, rather than the Persian, tradition, first described eighteen cycles "widely current in our days," then three new and less common rhythmic cycles and nine obsolete cycles, among them four that had been the creations of Marāḡī. Fourteen of these cycles were later cited in *Bahjat al-rūḥ*. This small treatise is distinguished from earlier writings by its unscientific approach. It includes mention of about thirty rhythmic cycles, of which two new ones (Farʿ and Do-yak) would remain in use for a long time, whereas the others would disappear (Table 8: part 1, part 2, part 3).

Finally, the number of rhythmic cycles was limited to twenty-four, probably to achieve symmetry with the twenty-four *šoʿba*s (secondary modes) of the system propagated by Marāḡī: "[T]he twenty-four rhythms are played in the presence of kings. . . . Seven cycles were created by the slave of the Sultan Mālekšāh Saljūqī for the players of *naqqāra*s." The author named five of them (see Table 8, above) but said no more about them, for "they are not played in the presence of kings. . . . They are theoretical (*qāl*) and produce no mood (*ḥāl*). Seven other cycles were invented by Ḡolām Šādī . . . : Żarb-al-Qadīm, Żarb-al-Molūk, large and small Hazaj, large and small Fāḵtī, Šāh-nāma" (*Bahjat al-rūḥ*, pp. 39-40).

As far as rhythm was concerned, the author of *Bahjat al-rūḥ* exhibited considerable originality in relation to earlier works. He enumerated all the rhythmic cycles in use, with their names and some of their characteristics. His transcription was the most original and the most complete that can be found in the older treatises, but it is also the most incoherent and hermetic. He used a great number of onomatopoeic designations, which apparently reproduce the sonorities of the percussion instruments (probably the *daf*, or the *naqqāra*), for example, *tan, tana, tanī, tanā, tanana, dīm, der, dernā, dertan*, and so on. The interpretation of these paradigms presents several difficulties and often varies from one manuscript to another. Furthermore, he described the rhythms not as a series of beats (*naqra*) but as a total number of low-pitched (*bam*) and higher-pitched (*zīr*) sounds (*żarb*). The positions of the beats were not represented on the axis of beats as in earlier works. The author was content simply to note that a particular rhythmic cycle was composed, for example, of seven *żarb*s, five of them *bam* and two *zīr*. It is thus often difficult or impossible to determine the relations among the beats and the syllabic paradigms. The same problem arises from the transcriptions of Amīr Khan: In chapter 9 of his *Resāla* he gave the name of twenty-one *oṣūl* with the number

of beats for each and six detailed examples of “the manner of playing the *oṣūl*,” chosen from among the oldest *oṣūl*. Čanbar thus is said to have fourteen beats and to be played *dek dak dakā dek*/*dakā dakā dek*/*dek dakā dek*/*dek dak*/*dakā dek dak dak*/*dakā dek dak dak*/*dakā dek dak dak*.

One minor anonymous source, *Maʿrefat-e ʿelm-e mūsīqī*, probably dating from the 17th century, provides a simple list of the rhythmic cycles then in use but without any description. The rhythms were derived from different pulses, and the experts were supposed to have established five fundamental patterns (*ʿoṣūl*): Motarraj, Awfar, Čahārgāh (actually the name of a mode), Żarb, and Moḵammas. This work marks a new stage in the Persian rhythmic tradition. The six basic rhythmic patterns of Ṣafī-al-Dīn and the other early writers had been assimilated to the seventeen fundamental cycles “that were established by Ḵᵛāja Saʿīd b. ʿAbd-al-Moʾmen, Ostād ʿAlī, Ostād Rūḥparvār, Mawlānā Ḥosaynī and ʿOwaybī, and Ḵᵛāja ʿAbd-al-Qāder (Marāḡī)” (*Maʿrefat*, p. 195); except for the last, none of the cited musicians is otherwise known.

The inventory given in *Maʿrefat-e ʿelm-e mūsīqī* is distinguished by the addition of several new rhythmic patterns and by a recasting of the old classification. The basic rhythms are no longer those inherited from the classics, nor are those of Marāḡī mentioned separately. Some names appear for the first time, notably Dawr-e hendī, which is still played in Turkey. The author cited active musicians who had apparently not left works of their own, which had not been done in the past. From these specific features, which are to some extent characteristic also of *Bahjat al-rūḥ*, it can be deduced that a page had been turned in Persian musicology.

Table 8 (above) encompasses the different rhythmic cycles in use in Persia, arranged according to several representative features. The modern Persian tradition has preserved only three names of rhythmic patterns, through the intermediary of the *gūša*s and *reng*s that bear their names: Żarb-e ʿoṣūl in 6/8 and Ḥarbī and Dotā-yakī (Do-yak?) in 2/4.

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