

CHAPTER 8

RHYTHM AND METER

STANDARD RHYTHMS AND meters, the kind used routinely by composers and performers, offer significant potential for variation and development (Carter 1955; Messiaen 1950). Logical alternatives also exist (Ligeti 1962; Penderecki 1960), many of which offer some composers greater scope to express their personal styles. Restrictions posed by common-practice notation have, some feel, artificially excluded many musical ideas.

Bar Lines and Pulsation

Discussing rhythm and meter inevitably leads to the division that distinguishes them: the bar line. For centuries music survived without bar lines. With the increase in the size of ensembles, the complexity of rhythmic ideas, and the emphasis on strong beat/weak beat forms such as music for dance, the bar line became a necessity. Example 8.1 shows a short excerpt for piano without bar lines. Note the difficulty of retaining rhythmic order during performance, even with one performer. Amplify this to the size of a large orchestra, and the need for some organizing factor becomes apparent.

Organizing music into measure-sized units, however, creates beat patterns and metrical pulses (weak beats and strong beats, depending on placement in the meter). These pulses constrain many contemporary composers who, as a result, turn to new possibilities. Example 8.2, the same passage as shown in Example 8.1 with the addition of bar lines, is much easier to read but also suggests strong downbeats and a sense of accented syncopation not present in Example 8.1.

These two examples have very different appearances, though both have exactly the same notes. Both have good and bad attributes. Music need not necessarily be restricted to measures or rely on beats. Such reliance can rob composers of the potentials of rhythmic exploration and freedom.

EXAMPLE 8.1. Excerpt for piano without bar lines.

EXAMPLE 8.2. The previous example, notated with bar lines.

Freeing Metric Constraints

Meter changes and composite meters are two of the most obvious methods of avoiding the regularity imposed by meter (Bartók 1934). Example 8.3 demonstrates both techniques. Note that the tendency to emphasize downbeats, as well as strong inner beats, has not changed. Metric monotony, however, has been at least temporarily relieved.

Isorhythms help to lessen the effect of bar lines and weaken their constraints on rhythm while continuing to maintain ensemble precision (Messiaen 1949). Example 8.4 shows an example of isorhythm. The first melodic line presents a long rhythmic idea that overlaps bar lines. In contrast, the second melodic line follows, even accentuates, the metric beats and implied accents.

EXAMPLE 8.3. Meter changes and composite meters.

EXAMPLE 8.4. Isorhythm used to lessen metric constraints.

Cross-rhythms (polyrhythms) can also relieve the effects of internally implied accents. Example 8.5 shows three cross-rhythms. The bottom line of Example 8.5a actually sounds in $\frac{3}{4}$ meter, creating a cross-rhythm against the upper line's $\frac{6}{8}$. The metric accents are either lessened or contrasted, depending on the surrounding style and context. Example 8.5b maintains three simultaneous meters, with the eighth-note beat remaining equal for all three, requiring a displacement of bar lines due to the different meters. While such polyrhythms (polymeters) expand rhythmic vocabularies, they also multiply the complexity of the music for performers. The two ideas in Example 8.5c achieve independence by the use of accents placed in different locations in the $\frac{4}{4}$ meter. The performers of such music can often be so intent on achieving correct accents that the meter tends to lose centrality and its implied internal accents. Consequently, the various ideas freely follow their own design rather than adhering to the possibly artificial boundaries of metric accents.

Hemiola—in general, the concept of three against two—can help alleviate the metric accents implied by bar lines while allowing bar lines to maintain ensemble order. Example 8.6a shows hemiola in its more typical, traditional sense. In Example 8.6b, chords tie across beats and bar lines, creating hemiola in a slightly less traditional guise. Note how the bar line aids in performance and yet does not disturb the rhythmic freedom of the music.

EXAMPLE 8.5. Three types of cross-rhythms. (continued)

EXAMPLE 8.5. (continued)

b) $\text{♩} = 120$

c) $\text{♩} = 92$

a)

b)

EXAMPLE 8.6. Two types of hemiola.

Actual avoidance of on-beat notes works as effectively as do ties. In Example 8.7 the use of ties and rests prevents metric interference, as does the use of irregular beat subdivisions. In similar fashion, the music in Example 8.8 retains beat and meter, but the irregular thirty-second-note subdivisions combined with intervening rests free it from metric regularity.

EXAMPLE 8.7. Avoidance of metric accents using ties and on-beat rests in combination.

$\text{♩} = 86$

EXAMPLE 8.8. Inner-beat complexity and rests used for maintaining meter without metric accents.

Metric Modulation

Metric modulation can also free melodic lines from the restraints of steady beats (Carter 1955). Example 8.9 shows five measures in which the tempo and the meter modulate so that the flow of music avoids regular and predictable bar lines. At the same time, the bar lines continue to help performers and conductor stay together.

$\text{♩} = 72$

EXAMPLE 8.9. Metric modulation.

Metric modulation can also have the reverse effect. Performers may actually accent downbeats more harshly in order to establish each new tempo variations. Combining some of the previous techniques to avoid metric accent with metric modulation can help to avoid these accents.

Example 8.10 shows two agogically created cadences. In Example 8.10a the composer has opted for an easy on-beat solution. Example 8.10b presents an alternative that stretches metric notation. Composers should dictate to notation, not vice versa. All of these methods, and many more, have been used by composers to maintain bar lines without restraining rhythmic freedom.

EXAMPLE 8.10. Strong downbeat cadence (a); midmeasure offbeat cadence with metric modulation (b).

Proportional Notation

In proportional notation, time equals horizontal space, with notes placed approximately in relation to the given time frame (Penderecki 1960). Example 8.11 shows a passage for piano in proportional notation. Here the notes sound as long as the lines following them, with duration proportional to the shown time lines. Although intricate rhythms are hard to indicate precisely, proportional notation does provide flexibility, and metric beat, implied accents, and so on, have vanished. While performers might force such accents and beat constraints on the music owing to their strong metrical backgrounds, the notation itself does not suggest such interpretation. Since non-

traditional rhythms such as those in Example 8.7 seldom receive perfect performances anyway, some composers feel that little precision is lost with proportional notation.

In large ensembles, however, proportional notation significantly increases risks of performance variability. Often in these circumstances, important melodic lines are identified by marks above or below the music, which are connected by vertical dotted lines to maintain entrance and exit accuracy. If these markings are improperly construed as beats, however, beat implications (accents, etc.) may occur. In extremely large time frames, proportional notation leads to rhythmic indeterminacy, a subject returned to in chapter 14.

Variations and Overviews

Occasionally some parts of a composition will need to be metrical, while others, even those that occur simultaneously, need to be rhythmically free (Ligeti 1962). Example 8.12 shows two approaches to this seeming contradiction. In each, the upper line receives a strong metric pulse that helps to articulate its various patterns. In the first excerpt, however, the accompaniment achieves metric independence by use of ties, avoidance of beats, and irregular subdivisions of the beat. The second excerpt shows a group of notes within boxes that indicate free rhythmic improvisation—a type of proportionality within meter that again introduces an element of indeterminacy.

EXAMPLE 8.12. Two approaches to metric and nonmetric simultaneity.

Both proportional and metrical notation can be used whenever the need arises (Crumb 1970). Composers may achieve almost any effect desired, from the strictest beat-dominated idea to the freest-flowing rhythmic lines. Example 8.13 makes use of both systems of notation for their respective benefits. The notation *senza tempo* indicates proportional sections. This “metriportional” approach does not rule out any possible rhythm or rhythmic grouping a composer might wish to use.

EXAMPLE 8.13. Combination of metric and proportional notations.

Many methods of avoiding bar lines simply create new rhythmic problems. With “metriportional” techniques the composer can explore rhythmic possibilities with great freedom without forgoing clarity of notation.

Many of the concepts in this chapter can be very difficult to implement effectively. Increased freedom does not necessarily imply increased quality, and the relaxing of metric controls may at first yield havoc. New and unorganized rhythms can be as confusing as new and unorganized timbres and pitch relationships. Structured and nonstructured rhythms must be bound together to create musical ends and not rhythmic chaos.

Figure 8.1 shows a compositional overview of a work from a metrical point of view. Note the unison metrical beginning, the slow transition to nonmeter in the midsection of the work, and the return to meter as the archlike form concludes. Example 8.14, in contrast, begins with a dense counterpoint of off-beat and tied rhythms, then modulates to a more metrical, almost static, point of arrival, before returning to the freer rhythmic texture of the beginning. Yet another approach is taken in Example 8.15, where the abrupt chords in the upper register interrupt a contrasting improvised section in the lower register.

Rhythmic densities can also form thick textures, much like swarming orchestral clusters (Ligeti 1965). These densities can be useful for creating points of arrival with smaller numbers of instruments. The initial pitch cluster in Example 8.16 is followed by an intense, beehive-like rhythmic cluster that dramatically increases the music’s



FIGURE 8.1. Sample metric overview of a work.

EXAMPLE 8.14. Rhythmic modulation in metered music.

EXAMPLE 8.15. Improvisation with sudden interruptions.

EXAMPLE 8.16. Static and motion clusters for string quartet.

density without increasing the number of instruments. (This micropolyphonic texture is described at length in chapter 9.)

Though any possible combination of free and metrically strict rhythm can be potentially right in a given context, the careful combination of these ideas with pitch, dynamics, articulation, and timbre form a work’s direction, organization, and drama.

In general, rhythm can be metric or proportional, can modulate from one to the other, or can be contrasted or combined. Each of these approaches has a place in music, but only in balance with other aspects of composition.

Composing Suggestions

- Create a work for piano in a moderate tempo $\frac{3}{4}$ meter in which rhythmic freedom is achieved by never striking a note on the beat and by using ties and on-beat rests. Transcribe the work into proportional notation.
- Compose a brief work for soloist and piano in which the two follow contrasting meters with juxtaposed bar lines. Rewrite the work using single bar lines and attempt to achieve the same results. Choose the most performable version.
- Compose a work for all available instruments using proportional notation with large time frames. Make the score serve as part for all performers. Do not use a time track or any other means for guaranteeing more exact entrances.
- Compose a short work for small ensemble of available instruments using “metriportional” notation.
- Analyze Example 8.17 for its use of rhythm and then compose a contrasting phrase of equal length that uses the same techniques but different notes and ideas.



EXAMPLE 8.17. Passage for analysis.

- In a short piece for two pianos, explore different meters and tempos in each part, using recognizable styles (e.g., waltz, march). Modulate between the two pianos slowly during the course of the piece so that each work ends with the other's beginning idea, meter, and tempo.
- Create a composite-rhythm overview of a composition of short duration. Compose a work for two available instruments and piano following this overview as closely as possible.