

Rhythm vs. Meter

by Frank Koonce

Composer/Theorist Paul Creston (1906-1985), in an insightful book on rhythm and meter, describes rhythm as “the *organization* of duration in ordered movement.”¹ He points out in his first sentence that rhythm and meter are not synonymous, although their lines of distinction became blurred during the twentieth century. Creston argues that meter is only one of four elements that comprise rhythm—the others being tempo, accent, and pattern. Brief descriptions of each follow.

Meter is the *measurement* of duration by pulses or units in groupings, called measures, which are separated by barlines. A meter of 2/4 has two pulses per measure; 3/4 has three pulses, etc. Creston suggests that the term “beat,” often used interchangeably with “pulse,” should be reserved for the actual (rhythmic) beat, which may or may not coincide with the (metrical) pulse.² All the pulses of a measure may or may not be sounded, but beats must be sounded. The subdivisions of a pulse or beat into smaller fractions of duration are referred to as “units.” In Example 1 there are three pulses, as shown by the meter signature of 3/4, but only two rhythmical beats. By subdividing the pulses into eighth-note units, one can see the placement of the beats in relation to the meter.



Example 1
Relationship of Pulses, Beats, and Units

A meter is described as being “simple” if each pulse can be subdivided into a two-part unit. Example 1, therefore, is in simple triple meter (three groups of two). The second dotted-quarter-note beat, if played against this established meter would be perceived as a syncopation—a stressed or accented note that goes against the established metrical pattern.

A meter in which the pulse can be subdivided into a three-part unit is called “compound.” In compound meters, the denominator of the meter signature represents the value of the primary unit instead of the pulse, as shown by Example 2 in compound-duple meter (two

¹ Paul Creston, *Rational Metric Notation: The Mathematical Basis of Meters, Symbols, and Note-Values* (Hicksville, NY: Exposition Press, 1979). In his preface, Creston notes that three linguistic societies in 1912 officially approved the “Revised Scientific Spelling of the English Language” by recommending the removal of “illogical” components, such as silent letters; i.e., “orderd” instead of “ordered.” In an attempt to draw parallels and strengthen his arguments for adopting a “rational” music notation, Creston deliberately re-spells words according to their “logical,” although nontraditional, alternatives.

Unfortunately, this seems to me to be more of a distraction than anything else; therefore, words in the citations from his text are silently changed to conform to their conventional spellings in the present article.

² *Ibid.*, 3.

groups of three). In this meter, a two-part beat pattern that goes against the ternary pulse would be perceived as being syncopated.



Example 2

Tempo is the speed at which the pulses or units of a meter occur. Creston informs us that tempo is correlated to meter. For example, in 3/4 meter at a tempo in which the quarter note equals 96, the quarter notes are the pulses and the eighth notes are the primary units. Therefore it would be classified as simple meter. At a tempo in which the dotted-half-note equals 96, the entire measure becomes the pulse and the quarter notes become the primary units; therefore, it now would be now classified as compound meter.³

Accent is an element of rhythm—but not of meter—a point strongly emphasized by Creston because “it does not affect in any degree the *measurement* of duration.” He notes, however, that many published definitions of meter mistakenly associate accent with meter, citing examples such as that in *Webster’s Third New International Dictionary*: “[Meter is] the part of rhythmical structure concerned with the division of a musical composition into measures by means of *regularly recurring accents* with each measure consisting of a uniform number of beats or time units, the *first of which has the strongest accent* [Creston’s italics].”⁴

One needs only to compare the waltz, sarabande, and mazurka (Examples 3-5) to disprove the italicized sections of the above definition. All three are in triple meter, but the waltz is accented on the first pulse, the sarabande is accented on the second pulse, and the mazurka is accented irregularly on the second or third pulse.⁵



Example 3

Vals, Op. 8, No. 4, Agustín Barrios Mangoré



Example 4

Sarabande, Suite in D minor, Robert de Visée

³ *Ibid.*, 4.
⁴ *Ibid.*, 23.
⁵ *Ibid.*, 23.



Example 5
¡Adelita! (Mazurka), Francisco Tárrega

Pattern is the division of a pulse, beat, or measure into smaller units, equal or unequal. A quarter beat, for example, may have a two-note pattern equally divided into two eighth notes, or unequally divided into a dotted-eighth and sixteenth; or it may be divided into other patterns of three or more notes.⁶

Rhythmic Structures

Creston identifies five “Rhythmic Structures” to categorize rhythm:

First Structure—Regular Subdivision: the organization of a measure into beats of equal duration, different from the number of pulses (see Examples 1–2).⁷ The most common form of this structure is the “hemiola,” a momentary change in which two beats are accented against a meter of three pulses (Example 6), or vice-versa—three beats against two pulses (Example 7). Again, these would be perceived as syncopation—stressed or accented notes that go against the established metrical pattern. Both excerpts are transcriptions from Baroque guitar tablatures.



Example 6
Canarios, Gaspar Sanz



⁶ *Ibid.*, 8.

⁷ *Ibid.*, 8

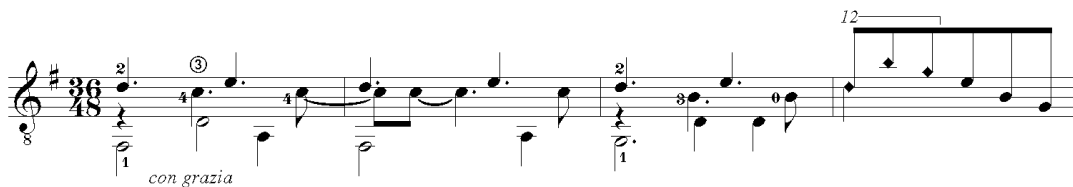
Example 7
Canarios, Francisco Guerau

Another way to look at hemiola is as an alternation between duple and triple meter—in other words, as a momentary metric change rather than a change of the beat pattern against an unchanging meter. Creston does not approve of this concept or practice because it links accent to meter—accent, he maintains, is an element only of rhythm. Nevertheless, for pieces that frequently alternate between two groups of three, and three groups of two, many composers and transcribers today prefer to combine meter signatures. This enables small note values to be beamed according to the metric grouping of each measure. Furthermore, it reduces the need for ties and slur markings, the latter of which (in guitar music) can then be reserved for left-hand technical slurs (*ligados*). The effect, however, still would be perceived as syncopation. Compare the notation in Example 8 to that in Example 6.



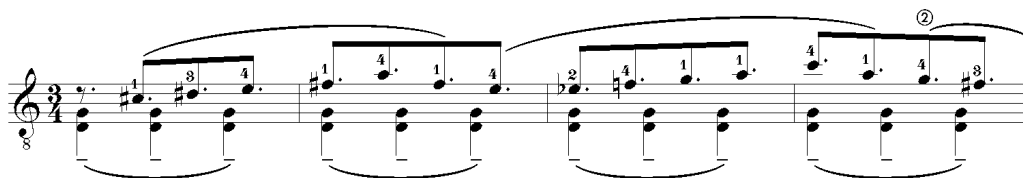
Example 8
Canarios, Gaspar Sanz

Similarly, a “polymeter” is one in which two or more meters are combined, simultaneously; and again, like the hemiola, the most common is a combination of simple triple with compound duple (Example 9).



Example 9
Andreína (Vals venezolano No. 2), Antonio Lauro⁸

Regular subdivision is possible in forms other than the hemiola and in polymeters other than 3/4 + 6/8 combinations, with perhaps the best-known example for guitar occurring in Britten’s *Nocturnal* (Example 10)⁹

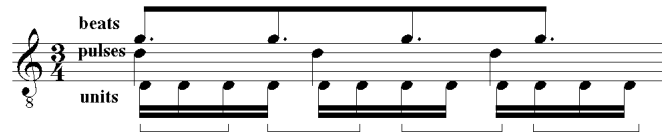


⁸ Antonio Lauro: *Works for Guitar*, vol. 1, ed. Alirio Diaz (Arcangues, France: Caroni Music, 1998), 4.

⁹ Benjamin Britten, *Nocturnal after John Dowland*, Op. 70 (London: Faber Music, 1965).

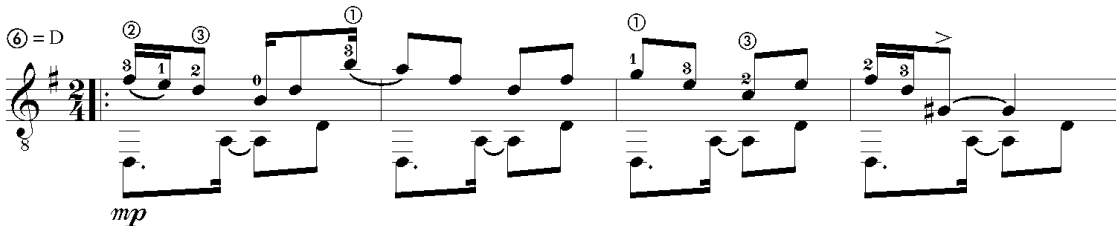
Example 10
 “Restless,” *Nocturnal*, Benjamin Britten

A seemingly complex passage like this may be counted easily by subdividing note values into fractions with a common denominator—in this case, 16th-note units (Example 11).

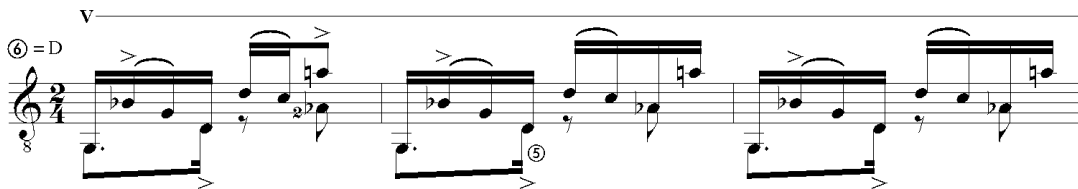


Example 11

Second Structure—Irregular Subdivision: the organization of a measure into unequal beats. “The principle is inherent in compound meters like 5/4 and 7/4, which are generally treated as, respectively, 3/4 + 2/4 and 4/4 + 3/4. The most common form of the Second Structure is the 3 + 3 + 2 pattern in 4/4 [or 2/4], the basic rhythm of the Cuban rumba.”¹⁰ Two popular guitar works having this pattern are *Saudade No. 3* by Dyens (Example 12) and *Danza Caracteristica* by Brouwer (Example 13).



Example 12
Saudade No. 3, Roland Dyens¹¹



Example No. 13
Danza Caracteristica, Leo Brouwer¹²

Third Structure—Overlapping: the extension of a phrase rhythm beyond the barline. This practice was common in Renaissance music of the sixteenth century, as shown in the excerpt by Luys Milán that was transcribed from Renaissance vihuela tablature (Example

¹⁰ Creston, 11.

¹¹ Roland Dyens, *Trois Saudades pour Guitare*, No. 3 (Paris: Éditions Musicales Hortensia, 1980).

¹² Leo Brouwer, *Danza Caracteristica* (Mainz: B. Schott's Söhne, 1972).

14). Vihuela tablatures were not organized according to our modern concept of meter. The original barlines simply mark off the individual pulse, known as the *tactus* (or *compás*, in Spanish tablatures). Many modern transcriptions retain these original barlines so that one *tactus* equals one measure.

③ = F#

The image shows three staves of musical notation. The top staff begins with a treble clef, a 2/4 time signature, and a key signature of one sharp (F#). A circled '3' with an equals sign and 'F#' is written above the staff. The music consists of several measures, with vertical barlines placed at the end of each pulse. The notes are mostly quarter and eighth notes, with some rests. The second and third staves continue the piece with similar notation, including some beamed eighth notes and sixteenth notes.

Example 14
Fantasia No. 3, Luys Milán
 (with original tactus barlines)

Today, we are accustomed to reading smaller values than those usually found in vihuela tablatures. Therefore, Example 14 shows a 2:1 reduction with the original note values reduced by half. With a 4:1 reduction, rhythmic structures become more clearly defined; however, it also becomes necessary to group two or more *tacti* into modern metrical measures. In doing so, accent patterns of the rhythmic structures then do not always coincide with the metrical pulses, as shown in Example 15.

③ = F#

The image shows two staves of musical notation. The top staff begins with a treble clef, a 2/4 time signature, and a key signature of one sharp (F#). A circled '3' with an equals sign and 'F#' is written above the staff. The music consists of several measures, with vertical barlines placed at the end of each metrical measure. The notes are mostly quarter and eighth notes, with some rests. The second staff continues the piece with similar notation, including some beamed eighth notes and sixteenth notes.

Example 15
Fantasia No. 3, Luys Milán
 (with tactus reduction and metrical barlines)

According to Creston, this is nothing more than “overlapping.” Accent, he maintains, is not an element of meter—which is just the measurement of duration—and that it is a twentieth-century misconception to believe that the first pulse of a measure is always

strong. Through the principle of overlapping, the phrase rhythms can cross the metric barlines, the effect being changes of meter without changing the metric notation.

Other transcribers, however, describe this type of music as being “multimetric” and may choose to write metric changes to accommodate the irregular rhythmical structures (Example 16).¹³



Example 16
Fantasia No. 3, Luys Milán
(with multimeter notation)

Creston acknowledges that metric changes are sometimes warranted; however, he strongly discourages their overuse. Furthermore, as pointed out by David Grimes, multimetric notation is subject to varying interpretations and “can lead to extremely convoluted and tortuous attempts to force Milán’s free-flowing music into artificial units.”¹⁴ Grimes prefers, therefore, to use an unmeasured notation—a staff without a meter signature and barlines (Example 17).



Example 17
Fantasia No. 3, Luys Milán
(with unmeasured notation)

Fourth Structure—Regular Subdivision Overlapping: a combination of the first and third structures, described by Creston as “the organization of a *group of measures* into equal

¹³ See Luis Gásson, *Luis Milán on Sixteenth-Century Performance Practice* (Bloomington and Indianapolis: Indiana University Press, 1996).

¹⁴ David Grimes, *The Complete Fantasias of Luys Milán* (Pacific, MO: Mel Bay, 2000), xii-xiii.

beats *overlapping* the bar. In other words, it involves two or more measures. As the hemiola is the most common form of the First Structure, so is it of the Fourth, this time in 2 measures of 3/4 (or 3/2 or 8/8).”¹⁵ Example 18 is transcribed from Renaissance vihuela tablature, with added phrase markings to indicate hemiola.



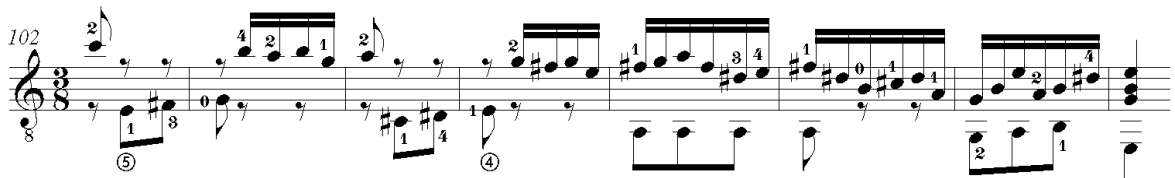
Example 18
Pavana No. 2, Luys Milán

Again, some transcribers and editors prefer multimetric notation instead (Example 19).



Example 19
Pavana No. 2, Luys Milán

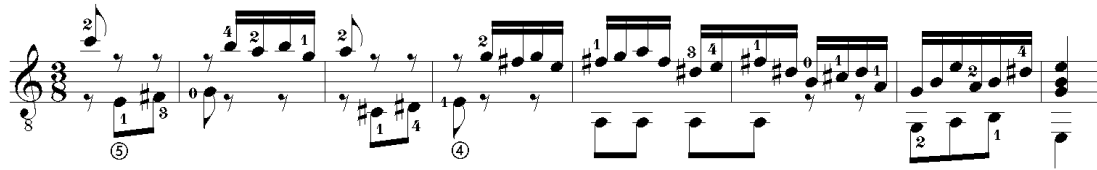
Hemiola patterns that encompass more than one measure are characteristic of Baroque dance music and are most commonly found in measures immediately preceding a cadence. In Example 20, the hemiola is derived from three sequential rhythmic groups of four sixteenth notes in measures 5–6.



Example 20
Prelude, *Lute Suite BWV 995*, J.S. Bach

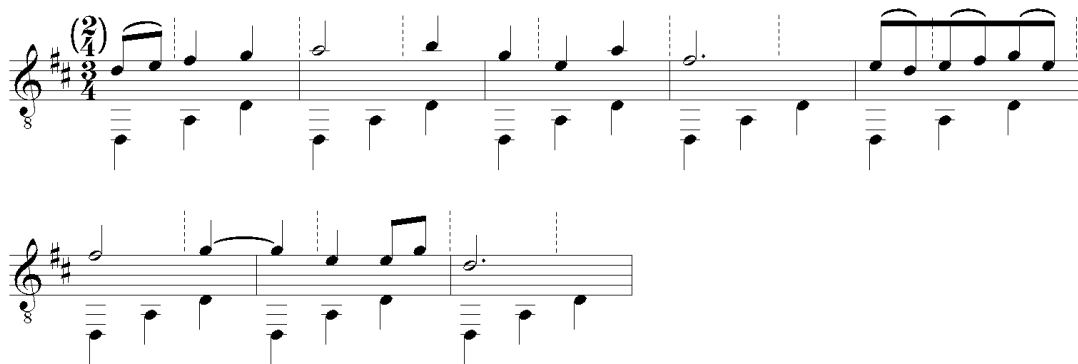
¹⁵ Creston, 14.

Musicians in Bach’s time were expected to understand such things; therefore, no special markings such as slurs were considered necessary. A composer today, however, may choose to use multimetric notation in a passage such as this or, as an alternative, to use cross-bar beaming as shown in Example 21.



Example 21
Prelude, *Lute Suite BWV 995*, J.S. Bach

The fourth structure, like the first, also includes polymetric pieces in which two or more meters are combined simultaneously; however, usually only a single meter signature is given for pieces in single-staff notation. In Example 22, the written meter is 3/4 to accommodate the ostinato (repeated) pattern of the bass; however, the implied meter of the treble is 2/4, as shown in parentheses.

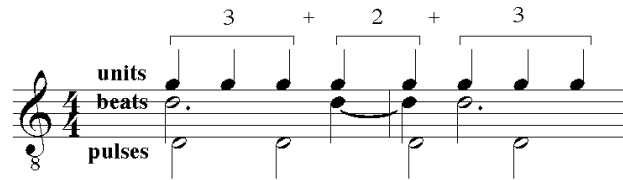


Example 22
Saltarello, attr. Vincenzo Galileo

Fifth structure—Irregular Subdivision Overlapping: “the organization of a group of measures into *unequal* beats overlapping the bar. According to Creston:

It is a combination of the Second and Third Structures, and is a rhythmic phenomenon particularly of the 20th century. The difference between the Fifth Structure and the Third is the presence—in the Fifth Structure—of a repeated rhythmic pattern. If in 2 measures of 2/4 we find the 3 + 3 + 2 rhythm *not* repeated, it would be termed simple Overlapping (Third Structure). On the other hand, if that same rhythm is repeated, it would be termed Irregular Subdivision Overlapping [Example 23].¹⁶

¹⁶ *Ibid.*, 17.



Example 23
Irregular Subdivision Overlapping

Music in the fifth rhythmic structure most often is found written in what may be termed “sequential meter” to place the strongest accents on the first pulse of each measure (Example 24).



Example 24
Exultation, Henry Cowell

The same excerpt may be re-written as irregular subdivision overlapping (Example 25), using a single meter signature since, as Creston argues, accents should not be relevant to meter and may fall on pulses other than the first. Again both options are available to today’s composers and arrangers, the choice being a matter of personal opinion as to which better serves the music.



Example 25
Exultation, Henry Cowell

Metrical Ambiguities

Other interpretative challenges, for performers, are pieces written in what may be termed “multiple meter,” the measurement of duration by a frame of two or more measures. Multiple meters, which have been in use at least since the seventeenth century, include “dimeters” (two-measure meters), “trimeters” (three-measure meters), and “tetrameters” (four-bar meters). Multiple meters are usually formed when the entire measure is the actual pulse. According to Creston, “there must be at least 2 *pulses* to a meter; consequently, when the entire measure is the pulse, there must be at least 2 *measures* to a

meter.”¹⁷ Composers may choose this method of notation in instances where it is considered advantageous to avoid excessively long measures.

The prelude from Bach’s *Lute Suite BWV 995* is diametric (at least in part), with measures 2-3, 4-5, etc., being paired. In this piece, because of the fast tempo, each measure becomes a single pulse and eighth notes become the primary units. A common mistake for modern-day performers, who are accustomed to associating accent with meter, would be to automatically align the accent with the pulse at the beginning of every measure; however, in this piece the accent falls more naturally on the second unit of each second measure (Example 28).



Example 28
Prelude, *Lute Suite BWV 995*, J.S. Bach

Beginning in the twentieth century, some composers began using what is sometimes called “additive meter,” a combination of two or more meters within a single measure. This practice (Example 29) may be seen as an extension of the combined metric signatures previously discussed and illustrated in Example 8.



Example 29
Mikrokosmos #148, Bela Bartok

Again Creston argues that this practice confuses rhythm and meter by incorrectly substituting a rhythmic structure for a metric signature, and that this is nothing more than the second rhythmic structure—irregular subdivision. Traditional meter signatures, he insists, can and should be used instead, as shown in Example 30.¹⁸

¹⁷ *Ibid.*, 102.

¹⁸ *Ibid.*, 70.

