Web Feature 3.3

Issues in tempo, meter, and notation

Our perception of the primary pulse stream is flexible but limited, and it does not always coincide with the beat value indicated as "receiving the beat" by the metric structure. At extremely slow tempos—say, $\frac{4}{4}$ time at a tempo of a quarter note at 40 beats per minute—we are likely to subdivide the given beat, and that first subdivision then becomes the primary pulse stream. (This is especially true in ensemble performance, where performers may silently count "1 – e – and – a" to synchronize their attacks precisely.) On the other hand, at faster tempos we might hear larger units of time—such as a full measure—as representing the primary pulse stream.

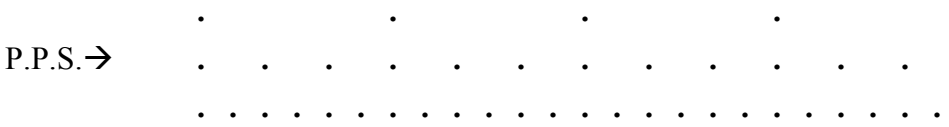
Examination of the metric structure diagrams themselves reveals that meters are sometimes more closely related than their notated meter signatures would seem to indicate. For example, a "close-up" examination of a $\frac{6}{8}$ metric structure—focusing on the level just below the primary pulse stream (if we consider the two dotted quarter notes per measure to be the primary pulse stream) and the levels below—reveals a pattern of divisions that looks much like $\frac{3}{4}$. In other words, if we slow down a measure of $\frac{6}{8}$ enough, it may sound to us as though it is two measures of $\frac{3}{4}$.

Two listening examples that illustrate some of these concepts follow. In both instances, Bach did not precisely indicate the tempos; as a result, the individual performer (in the case of the keyboard work) or the conductor (in the case of the orchestral piece) must determine the tempos. The result, in the case of these two particular recordings, illustrates something of the vagaries of metric notation.

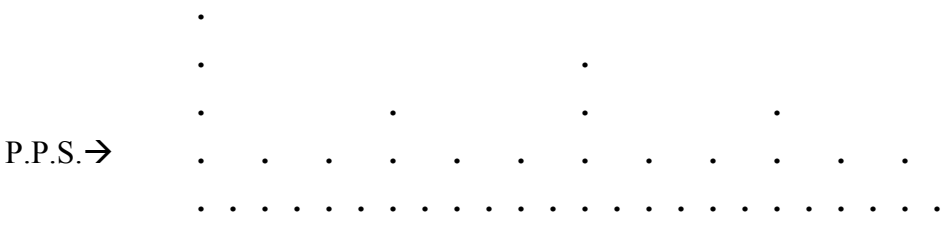
Web Listening Example 3.1: Bach, Two-Part Invention in D Minor (Glenn Gould, piano)
Web Listening Example 3.2: Bach, Brandenburg Concerto #3, 3rd mvt. (21st Century Symphony Orchestra)

Listen to both of these pieces all the way through. If you have obtained the performances indicated above, the tempos should appear to be about the same. What metric classification (simple vs. compound, duple vs. triple) do you think best describes what you hear? Do they appear to be the same type of meter?

As it turns out, the two pieces have altogether different metric structures—or so the scores tell us. The two-part invention is notated in $\frac{3}{8}$, which is an example of simple triple meter. In the following diagram, the uppermost level represents the unit of the measure, so this diagram shows four measures in all.



Bach's choice of $\frac{3}{8}$ rather than the more common $\frac{3}{4}$ perhaps indicates that this piece should be taken at a quite lively tempo (and, in fact, there are many performances of this invention available that are characteristically faster than Gould's, so I have admittedly stacked the deck for this exercise). The Brandenburg Concerto movement, on the other hand, is notated as $\frac{12}{8}$, an example of compound quadruple meter. In the following diagram, the uppermost level represents the unit of the measure, so this diagram represents just one measure.

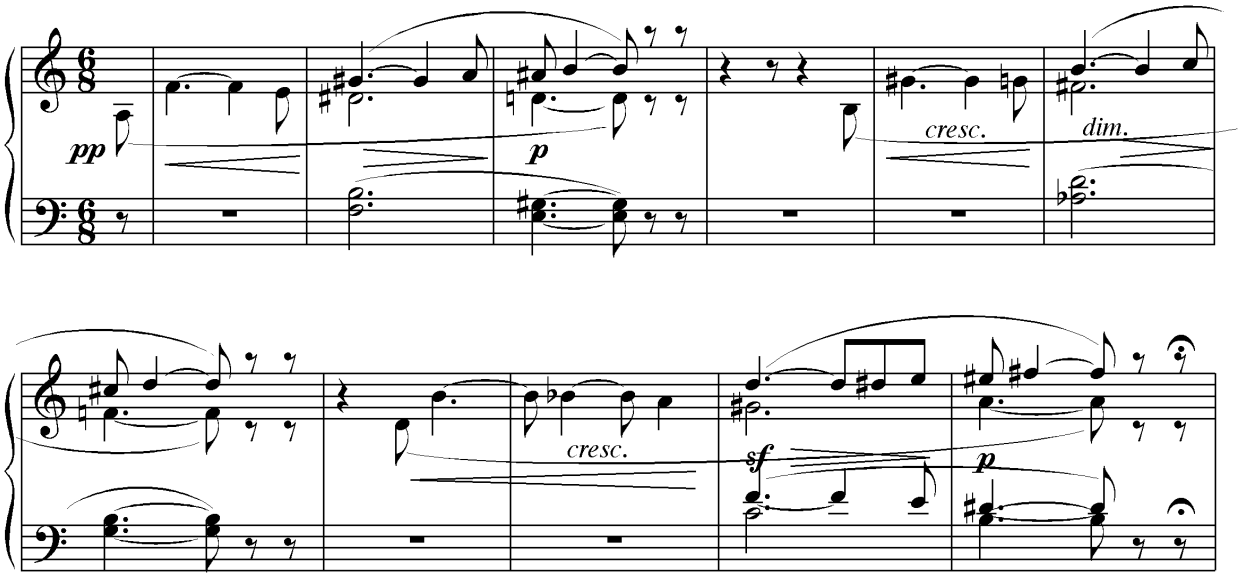


Notice that the lowest three levels of the Brandenburg metric diagram are identical to the diagram for the two-part invention (although in your experience as a listener you may have assigned the P.P.S. status to the level immediately above the level I have indicated; remember, such perceptions can vary from listener to listener). More important, the upper part of the Brandenburg diagram, at the level of the P.P.S. and above, appears to be a different type of metric organization ("simple duple" or "simple

quadruple") than the lower part, at the level of the P.P.S. and below, which appears to be simple triple. This combination of duple (or quadruple) and triple within a single metric structure is an important characteristic of compound metric structure—at the higher level it appears to be duple, but at the lower level it is triple. (Again, there are many performances of this movement available that are faster than the one I selected; at faster tempos it is much easier to hear this piece as a quadruple meter that is subdivided into two levels, threefold, and sixfold, respectively.

Web Listening Example 3.3: Richard Wagner (1813–1883), Prelude to Act I, *Tristan und Isolde* (1857–59)

The Prelude to Richard Wagner's opera *Tristan und Isolde* is ostensibly in $\frac{6}{8}$ (Web Example 3.2), the same meter as "The Irish Washerwoman" (see Example 3.2 in the text). From listening to the first couple of minutes of this piece, it obviously does not sound like a jig. The extremely slow tempo, for one thing, obscures the meter, along with the long, tied notes and the gaping silences between phrases.



Web Example 3.2. Wagner, Prelude to *Tristan and Isolde,* mm. 1–11.

One way in which this piece was groundbreaking was in its use of meter, which is here arguably a means of coordinating the many parts rather than projecting any strong metric

structure. As clear, predictable metric structures came to be avoided in much of the music of the twentieth century, meter signatures were generally used for ease in controlling the sometimes complex coordination of parts. For example, the first movement ("Liturgie de Cristal") of the *Quatuor pour la Fin du Temps* (*Quartet for the End of Time*) (1940–41) by Olivier Messiaen (1908–1992) is notated in $\frac{3}{4}$ throughout, although it would nevertheless require some effort to hear it as a waltz![1]

[1] This composition is included in several score anthologies, including Charles Burkhart, *Anthology for Musical Analysis, Postmodern Update,* 6th ed. (Belmont, CA: Wadsworth/Thomson, 2008), 502-508; and J. Peter Burkholder and Claude V. Palisca, *Norton Anthology of Western Music, Volume 2: Classic to Twentieth Century,* 5th ed. (New York: W. W. Norton, 2006), 1222-1229.