Music Theory II: Rhythm and Duration

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Agenda

- Tempo, Beats, and Rhythm
- Rhythms and Duration
- Time Signatures
Tempo, Beats, and Rhythm
What is tempo?

- Definition 1 – Tempo: The speed at which a passage of music is (or should) be played.

- Definition 2 – Tempo: The rate or speed of motion or activity; pace.

- Example: 100 bpm, Allegro (120–168 bpm),Accelerando (increase tempo)
What is a beat?

- Definition 1 - Beat: A rhythmic movement.

- Definition 2 - Beat: The speed at which a piece of music is played.

- Example: 4 beats in a measure, stay with the beat, etc.
What is rhythm?

- Definition 1 - Rhythm: A strong, regular, repeated pattern of movement or sound.

- Definition 2 - Rhythm: The synthetic arrangement of musical sounds, principally according to duration and periodic stress.

- Example: jazz swing, 4 on the floor, etc.

- We experience rhythm in music but also in speech and actions.
What’s the difference?

- Tempo is how slow or fast a piece is performed
- Rhythm is the placement of sound in time
- Tempo is generally measured as the number of beats per minute
- Beat = basic measure of time in music
In Class Example
Rhythms and Duration
Tempo + Beats + Rhythm = Music?

- Without a beat, we don’t have a sense of rhythm. This is because it becomes a random placement of sound.

- Even when there is “no beat”, we subconsciously think of one when we encounter groupings. If we can’t, we perceive it as “garbage noise”.

- Our tempo dictates the speed of the beat. However, sometimes we perceive tempos differently! Why?
Different Rhythmic Durations

- Whole note
- Half note
- Quarter note
- Eighth note
- Sixteenth note
- 32nd note
- 64th note
- Triplet
- 5-let
- etc.
Names of note values are defined by 4/4

- When we think of naming conventions, most times it is with relation to 4/4.
- This is because “common time” is another name for 4/4 and is one of the most commonly used/known time signatures.
- The 4 on top dictates the amount of beats in a single measure and the 4 on the bottom dictates what note gets the beat. (more on this later)
Quarter Note

- Duration: 1 beat
- In one common time measure, we can play 4 quarter notes.
Note: We will refer to “beats” as the equivalent of one quarter note for these definitions.
**Half Note**

- Duration: 2 beats
- In one common time measure, we can play 2 half notes.
- 2 quarter notes fit in the duration of 1 half note.
Whole Note

- Duration: 4 beats

- In one common time measure, we can play 1 whole notes.

- 2 half notes fit in the duration of 1 whole note.

- 4 quarter notes fit in the duration of 1 whole note.
Eighth Note

- Duration: 1/2 beat
- In one common time measure, we can play 8 eighth notes.
- 2 eighth notes fit in the duration of 1 quarter note.
Sixteenth Note

- Duration: 1/4 beat
- In one common time measure, we can play 16 sixteenth notes.
- 2 sixteenth notes fit in the duration of 1 eighth note.
- 4 sixteenth notes fit in the duration of 1 quarter note.
What is this?
Note: Generally, we group notes by beat. This makes it easier on the reader.
Triplet

- Duration: 1/3 beat
- In one common time measure, we can play 12 triplets.
- 1.5 triplets fit in the duration of 1 eighth note. (.17 beats away in either direction!)
- 3 triplets fit in the duration of 1 quarter note.
The list goes on and on!

- You may have noticed this, but these terms are really ways for musicians to do a bunch of math easily.

- We can layer different rhythmical values over each other and know exactly where they should be placed with relation to other notes around it thanks to this notational style.

- Examples: 2 over 1, 3 over 2, 4 over 3, 5 over 4, 5 over 2, etc.
Rhythm and Duration via Computers

- Computers understand rhythm as duration without regard to tempo or beats.
- What we see as 120bpm it sees as sound (or lack of it) every 0.5 second.
- When computers play sounds/music, they are “perfect”.
- Metronomes are “perfect”.
One more rhythmical curveball: the dot

- The dot adds 0.5 the value of any note to the existing note.

- Example: Dotted quarter note gets 1.5 beats

- What about a dotted half note and dotted eighth note?
  - Dotted half: 3 beats
  - Dotted eighth: ¾ beat
Time Signatures
What is a time signature?

- Time Signature: An indication of rhythm following a clef, generally expressed as a fraction with the denominator defining the beat as a division of a whole note and the numerator giving the number of beats in each bar.

\[
\begin{array}{ccc}
4 & 3 & 6 \\
4 & 1 & 8 \\
\end{array}
\]

\[
\begin{array}{ccc}
C & \text{C} & 7 \\
\end{array}
\]
Visually, it looks like this

Number of Beats Per Measure

Note Value Per Beat
Examples

3/4 TIME SIGNATURE
"Over The River & Through The Woods"

6/8 Time
IN CLASS EXAMPLE
Time signatures dictate how we group things

- What’s the difference between 4/4 and 2/2?
- Where’s the time?
- Rhythms per bar vary.
- We don’t care what rhythms are in a bar as long as they add up to the proper values.
Example

4 beats in a measure

4 quarters = 2 halves = 1 whole = 2 quarters + four eighths = and so on

A quarter note gets one beat
In Class Example
What is pulse?

- Pulse: the musical beat that you perceive/hear in music.
- Example: 4/4 vs 2/2
The conductor helps musicians portray pulse

Examples:

1. Feeling of “one”:
   https://www.youtube.com/watch?v=SJU0lC3iHaY

2. Changing time:
   https://www.youtube.com/watch?v=v436lGbKL_o

3. Lead by expression:
   https://www.youtube.com/watch?v=22wEhOdfAfA
Next Time

- How to identify rhythms, pulse, and time signatures in music
- How to identify with relation to key and musical content
- Subjectivity of notation and what it means for the reader