Aspects of Rhythm and Meter
Regularity vs Irregularity

- **Meter**
  - Ordinary meters as notated
  - Ordinary meters as sounded/heard
  - Unmeasured music
  - Polymeter; hypermeter

- **Accent**
  - Prosody approach
  - Tonal inflectional

- **Hierarchical aspects of rhythm**
  - Melodic contributions
  - Harmonic contributions
# Meter and Prolation

<table>
<thead>
<tr>
<th></th>
<th>Simple (subdivision = 2)</th>
<th>Compound (subdivision = 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duple Meters</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/2</td>
<td>↓ ↓</td>
<td>↓ ↓ ↓</td>
</tr>
<tr>
<td>2/4</td>
<td>↓ ↓</td>
<td>↓ ↓ ↓</td>
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<tr>
<td>2/8</td>
<td>↓ ↓</td>
<td>↓ ↓ ↓</td>
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<tr>
<td><strong>Triple Meters</strong></td>
<td></td>
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<tr>
<td>3/2</td>
<td>↓ ↓ ↓</td>
<td>↓ ↓ ↓</td>
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<tr>
<td>3/8</td>
<td>↓ ↓ ↓</td>
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<tr>
<td><strong>Quadruple Meters</strong></td>
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<tr>
<td>4/2</td>
<td>↓ ↓ ↓ ↓</td>
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</tbody>
</table>

**Conventional meters today**

<table>
<thead>
<tr>
<th>16th Century Note Durations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maxima</td>
</tr>
<tr>
<td>Longa</td>
</tr>
<tr>
<td>Breve = Double whole note</td>
</tr>
<tr>
<td>Semibreve = Whole note</td>
</tr>
<tr>
<td>Minim = Half note</td>
</tr>
<tr>
<td>Semiminim = Quarter note</td>
</tr>
<tr>
<td>Fusa = Eighth note</td>
</tr>
<tr>
<td>Semifusa = Sixteenth note</td>
</tr>
</tbody>
</table>
Metrical ambiguity

Common presentations
- Marches
- Jazz
- Dance rhythms
- 16th-century music
Accent (music with lyrics)

Prosody models

Simple Duple:
\[
\begin{align*}
\frac{\text{\textcopyright}}{2} & \quad \hat{\text{\textcopyright}} & \quad \hat{\text{\textcopyright}} \\
\frac{\text{\textcopyright}}{2} & \quad \hat{\text{\textcopyright}} & \quad \hat{\text{\textcopyright}} \\
\frac{\text{\textcopyright}}{2} & \quad \hat{\text{\textcopyright}} & \quad \hat{\text{\textcopyright}} \\
\end{align*}
\]

Simple Triple:
\[
\begin{align*}
\frac{\text{\textcopyright}}{3} & \quad \hat{\text{\textcopyright}} & \quad \hat{\text{\textcopyright}} \\
\frac{\text{\textcopyright}}{3} & \quad \hat{\text{\textcopyright}} & \quad \hat{\text{\textcopyright}} \\
\frac{\text{\textcopyright}}{3} & \quad \hat{\text{\textcopyright}} & \quad \hat{\text{\textcopyright}} \\
\end{align*}
\]

Simple Quadruple:
\[
\begin{align*}
\frac{\text{\textcopyright}}{4} & \quad \hat{\text{\textcopyright}} & \quad \hat{\text{\textcopyright}} \\
\frac{\text{\textcopyright}}{4} & \quad \hat{\text{\textcopyright}} & \quad \hat{\text{\textcopyright}} \\
\frac{\text{\textcopyright}}{4} & \quad \hat{\text{\textcopyright}} & \quad \hat{\text{\textcopyright}} \\
\frac{\text{\textcopyright}}{4} & \quad \hat{\text{\textcopyright}} & \quad \hat{\text{\textcopyright}} \\
\end{align*}
\]

\(\text{\textcopyright}=\)primary accent \(\cup=\)secondary accent

Tones & Word Accents

- Level:
  - \(\hat{\text{\textcopyright}}\) or \(\hat{\text{\textcopyright}}\) Extra high
  - \(\hat{\text{\textcopyright}}\) High
  - \(\hat{\text{\textcopyright}}\) Mid
  - \(\hat{\text{\textcopyright}}\) Low
  - \(\hat{\text{\textcopyright}}\) Extra low

- Contour:
  - \(\hat{\text{\textcopyright}}\) or \(\hat{\text{\textcopyright}}\) Rising
  - \(\hat{\text{\textcopyright}}\) Falling
  - \(\hat{\text{\textcopyright}}\) High rising
  - \(\hat{\text{\textcopyright}}\) Low rising
  - \(\hat{\text{\textcopyright}}\) Rising-falling
  - \(\hat{\text{\textcopyright}}\) Global rise
  - \(\hat{\text{\textcopyright}}\) Global fall

\(\downarrow\) Downstep
\(\uparrow\) Upstep

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Irregularity, varying meters
Unmeasured music

Columba Aspexit (Sequentia de sancto Maximo)-1st stanza
by Hildegard von Binga (1098-1179)
published by Hildegard Publishing Co.

Suspended meter

(Auftakt?)
Approaches to Rhythmic Analysis
Continuous information

- Durational change “intervals”
- Accentual values/weights

(a) 1 2 3 4 5 6 7 8 9 10
(b) 1 1 2- 2 0 1- 1- 1 4-
(c) 1 4 1 4 1 2 3 4 1 3
(d) + - + - + - + - +

- Hauptmann (1853)
- Zarhipov (1965)
- Leppig (1987)
Accentual values, weights

- Lerdahl/Jackendoff (GTTM)
- Temperley
- Camberoupolous
- Singer
- Volk
- Narmour
- Jones
Pitch accents

“Melodic” vs. “rhythmic” accent

- First, last pitches in phrase
- Highest, lowest pitches in phrase
- Various combinations of these in judgments of melodic similarity

Jones and Pfordresher (2003)
Harmonic rhythm

Work of Joseph Swain

1. Activity levels

Ex. 41. Corelli, Concerto op. 6, no. 8, III, mm. 9-14.

Allegro

2. Rhythm of Harmonic Change

3. Root rhythm


Root
Harmonic rhythm (2)

4. Density

Ex. 6-1. Debussy, Prelude no. 1, book 1, "Danses de Delphes," mm. 1-10.
Harmonic rhythm (3)

5a. Density + Function

Ex. 7-5. Vivaldi, Concerto op. 8, no. 4, “Winter,” I, mm. 1–12.

Allegro non molto

Root

Density

Function

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Harmonic rhythm (4)

6. Final tiered view

Inner and outer metric structure

Work of Anja Fleisher Volk

- **Main premise**: coincidence of “inner” and “outer” metric structures renders strongest accents

- **Main repertories**:
  - Madrigals
  - Renaissance sacred vocal music
  - Renaissance dances
  - Bach keyboard music (WTC)
  - Brahms, Stravinsky
  - Ragtime

- **Working method**:
  - Differentiation of
    - **Metric weight**
    - **Spectral weight**
  - Evaluations proceed **voice by voice**

- **Unusual constructs**:
  - Metrical dissonance

- **Unusual uses**:
  - Genre classification