Repertories with special needs vs. Common Western Notation (CMN)

Music 253/CS 275A
Stanford University
Written representations of music

- Common Western notation (CMN)
  - References specific pitches and relative durations
  - Assumes regularity of meter
  - Has numerous graphical conventions
  - Is flexible and extensible (up to a point)
  - Potential includes hundreds (or thousands) or graphical objects
  - Has numerous organizational conventions (scores, parts, etc.)
  - Meaning of given object often conferred contextually
Written representations of music

- Western non-common
  - A. Neumes: specifies relative pitches, often in patterned groups associated with particular words or syllables
  - B. Mensural notation: differentiates multiple organizational hierarchies for meter and duration
  - C. Tablature: pitch and note onset information tied to gestural info
  - D. Music since 1950: arbitrary requirements for irregular meter, unusual tunings, unusual gestures
  - E. Braille MN: tactile output of binary representation; several methods of organization and national dialects
A. Neumes

From the *Carmina Burana*
(Bavarian State Library Hss Cgm 4660, Munich


- **Staves**: usually 4-line
- **Notes**: shapes not standardized
- **Durations**: not explicit
- **Lyrics** (lang.): mainly Latin
- **Lyrics** (script): special fonts, diacriticals
Mensuration signs

Measurement, grouping

<table>
<thead>
<tr>
<th>Tempus</th>
<th>Prolatio</th>
<th>Sign</th>
<th>Semibreves</th>
<th>Minims</th>
<th>Modern</th>
</tr>
</thead>
<tbody>
<tr>
<td>perfectum</td>
<td>maior</td>
<td>⬤</td>
<td>⬤</td>
<td>⬤</td>
<td>9/8</td>
</tr>
<tr>
<td>perfectum</td>
<td>minor</td>
<td>⬤</td>
<td>⬤</td>
<td>⬤</td>
<td>3/4</td>
</tr>
<tr>
<td>imperfectum</td>
<td>maior</td>
<td>⬤</td>
<td>⬤</td>
<td>⬤</td>
<td>6/8</td>
</tr>
<tr>
<td>imperfectum</td>
<td>minor</td>
<td>⬤</td>
<td>⬤</td>
<td>⬤</td>
<td>2/4</td>
</tr>
</tbody>
</table>
B. Mensural notation

Metrical hierarchies

Josquin, “perfect”

Dufay: imperfect

Ockeghem: Cut
C. Fretted-instrument tablature

Six-string grid
Duration separated
Many graphical dialects

Lute
C. Tablature (guitars)

- Electric bass: 4-string
- Acoustic 6-string
- Russian 7-string
- French 5-string
- Guitarron (Mariachi)
C. Classical guitar

Andalusian

Plaisir D'amour
Fingerstyle Guitar Solo

Jean Paul Égidie Martini (1741-1810)
Arranged Bill Tyers
C. Tablature as….

- As pictographs
- As numeric codes
- As other graphs


http://en.wikibooks.org/wiki/Guitar/Tablature
C. Wind and keyboard tablatures
C. Trumpet tablature
C. Anatolian folk instruments
Yang qin (zither)

Zhu, 5th cent. BCE
Guqin notation (tablature)
D. Recent music

- Articulation marks
- Compound meters
- Polymeters
- Quarter-tones
- Off-staff presentations

*Music Theory Spectrum* Volume 16, Number 1, Spring 1994
Peter H. Smith, "Brahms and Schenker: A Mutual Response to Sonata Form"
D. Systems of arbitrary complexity

Hyo-Shin Na’s “Rain Study”

Typeset in SCORE by Craig Sapp (c. 2008)
E. Braille music notation

- Requires impact printing (raised “cells” of information)
- Two chapters on Braille MN in *Beyond MIDI*

Cells 1, 2, 4, 5: “data” bits
Cells 3, 6: switches
Non-Western music

- Tuning systems unpredictable
  - Ambiguities of tuning, temperament, scale degrees
- Non-Western instruments (gesture)
  - String
  - Wind
  - Percussion
  - Tuned percussion
- Different understandings of pitch and duration
Other special-needs repertories

Cheironomic notation

Greek Orthodox chant

Tibetan chant
Combinations of the above

Γενόμενα των πως γράφονται τα κείμενα μετά μουσικής εἰς ΒΡΑΙΛΛΕ. Ἐκ τοῦ Ἀναστασιματαρίου Ἰωάννου τοῦ πρωτοψ.

Greek Orthodox chant in Braille music notation
SCORE for special notations

- Has extensive drawing capabilities
  - Anticipated PostScript in use of splines
- Has a few “palettes” for special characters
  - Chant
  - Mensural notation
  - Tablatures (harp, trumpet, drum, guitar)
  - Large-print notation (for plotter) [no Braille MN]
- Legacy of large-print editions
Maximum user control

- Comes at price of parametric manipulation!