Explorations in Notation
Contemporary Notational Types

- Symbolic notation
- Improvisational notation
- Graphic notation

- Metric notation

- Proportional (spatial) notation:
  - Time represented spatially, rather than symbolically.
  - Durations may be general or specific, represented by regular tick marks, bracketed timing indications, or a pre-defined temporal-spatial relationship.
  - Some degree of “standard” (symbolic) notation may be incorporated, but is usually modified in some way.
  - Many of these notational innovations have already been codified (see Kurt Stone, *Music Notation in the Twentieth Century*).
Three Notations of a Medieval Chant

In Neumatic notation (8th-14th centuries):

S
Anctus, * Sánctus, Sán-ctus Dóminus Dé- us
Sá- ba- oth. Plé-ni sunt caé- li et térra gló-ri- a

In Modern notation (17th century-present):

San- ctus, * San- ctus, San- ctus Dó- mi- nus
De- us Sá- ba- oth. Ple- ni sunt caé- li

In “stemless” notation (late 20th century):

San- ctus, * San- ctus, San- ctus
Dó- mi- nus De- us Sá- ba- oth. Ple- ni sunt
Proportional (Spatial) Notation

Representing duration in proportional notation

- *Senza misura* (spatially notated sections) represented by a distinct time signature, which may be notated in several ways:

- Durational continuum (values arranged from shortest to longest):

- Rests may be represented by empty space and/or “breath marks”:

- Accelerando/ritardando groupings represented by “feathered beaming”; as fast as possible represented by slash through beamed group:
Proportional (Spatial) Notation


Luciano Berio: *Sequenza I* (1958)

A. Original (proportional) notation:

B. The composer’s transcription into metric notation:
Henry Cowell: 
*The Banshee* (1925)

**Explanation of Symbols**

"The Banshee" is played on the open strings of the piano, the player standing at the crook. Another person must sit at the keyboard and hold down the damper pedal throughout the composition. The whole work should be played an octave lower than written.

R. H. stands for "right hand." L. H. stands for "left hand." Different ways of playing the strings are indicated by a letter over each tone, as follows:

- **A** indicates a sweep with the flesh of the finger from the lowest string up to the note given.
- **B** sweep lengthwise along the string of the note given with flesh of finger.
- **C** sweep up and back from lowest A to highest B-flat given in this composition.
- **D** pluck string with flesh of finger, where written, instead of octave lower.
- **E** sweep along three notes together, in the same manner as **B**.
- **F** sweep in the manner of **B** but with the back of finger-nail instead of flesh.
- **G** when the finger is half way along the string in the manner of **F**, start a sweep along the same string with the flesh of the other finger, thus partly damping the sound.
- **H** sweep back and forth in the manner of **G**, but start at the same time from both above and below, crossing the sweep in the middle.
- **I** sweep along five notes, in the manner of **B**.
- **J** same as **I** but with back of finger-nails instead of flesh of finger.
- **K** sweep along in manner of **I** with nails of both hands together, taking all notes between the two outer limits given.
- **L** sweep in manner of **C** with flat of hand instead of single finger.
Background & Musical Characteristics

- Born in Krakow, Poland.
- Exposure to contemporary music limited during his youth, due to restrictive Soviet culture.
- *Threnody—for the Victims of Hiroshima* (1960) was his breakthrough work, reflecting the influence of electronic music through purely acoustic means.
- “Soundmass” works from the 1960s distinguished by their use of color and texture, as well as innovative notation.
- Religious (specifically, Catholic) and political themes permeate his work.
- Work during the 1970s reflects a change in direction, combining his unique approach to texture/timbre with an increasing interest in tonality.
- During the 1980s, his work became unabashedly tonal.
Krzysztof Penderecki: *Threnody for the Victims of Hiroshima* (1960)

**Abbreviations and Symbols**

<table>
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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>raised by $\frac{1}{4}$ tone</td>
<td>$\dagger$ play on tailpiece (arco) $\dagger$</td>
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<tr>
<td>raised by $\frac{3}{4}$ tone</td>
<td>$\ddagger$ play on bridge $\ddagger$</td>
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<tr>
<td>lowered by $\frac{1}{4}$ tone</td>
<td>$\downarrow$ percussion effect: strike the upper sounding board of the violin with the nut or the finger-tips $\downarrow$</td>
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<tr>
<td>lowered by $\frac{3}{4}$ tone</td>
<td>$\flat$</td>
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<tr>
<td>highest note of the instrument (indefinite pitch)</td>
<td>$\blacktriangle$ several irregular changes of bow $\blacktriangle$</td>
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<tr>
<td>play between bridge and tailpiece</td>
<td>$\uparrow$ molto vibrato $\uparrow$</td>
</tr>
<tr>
<td>arpeggio on 4 strings behind the bridge</td>
<td>$\natural\natural$ very slow vibrato with a $\frac{1}{4}$ tone frequency difference produced by sliding the finger $\natural\natural$</td>
</tr>
<tr>
<td></td>
<td>$\nabla$ very rapid not rhythmized tremolo $\nabla$</td>
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Krzysztof Penderecki: *Threnody for the Victims of Hiroshima* (1960)

Detail from Score
Krzysztof Penderecki: *Threnody for the Victims of Hiroshima* (1960)

Detail from Score

- **Trajectories of outer parts**
- **Resulting pitch band**
Krzysztof Penderecki: *Threnody for the Victims of Hiroshima* (1960)

*1) Exact notation is given in the parts.*
Krzysztof Penderecki: *Threnody for the Victims of Hiroshima* (1960)
Krzysztof Penderecki: *Threnody for the Victims of Hiroshima* (1960)
Toru Takemitsu: *Rain Spell* (1983)

A

Freely, very spatially.

Piano

Harp

Vibraphone

Flute

Clarinet (in B♭)

(Transposed)
Toru Takemitsu: *Rain Spell* (1983)
Toru Takemitsu: *Rain Spell* (1983)
Toru Takemitsu: *Rain Spell* (1983)
Background & Musical Characteristics

- Born in Charleston, West Virginia.
- Studied composition at the University of Michigan; taught for many years at the University of Pennsylvania (1965-1997).
- Awarded Pulitzer Prize in Music (1968) for *Echoes of Time and the River*.
- His distinctive works are characterized by:
  - Uniquely elegant and elaborate notation.
  - Instrumental and vocal exploration.
  - Effective integration of tonal and non-tonal elements.
  - Theatrical, often ritualistic approach to performance.
  - References to non-Western and historical Western music (via quotation, stylistic appropriation, and instrumentation),
  - Extramusical programs, numerology, and poetic references.

*George Crumb* (b. 1929)
Background & Musical Characteristics

- **Vox Balanae** (Voice of the Whale), 1970: quotation from Richard Strauss *Also Sprach Zarathustra*

- **Ancient Voices of Children**, 1970: quotation from J.S. Bach *Bist du bei Mir* (from *Notebook for Anna Magdalena Bach*)

- **Black Angels**, 1970:
  - Pavana Lachrymae (Schubert quote)
  - Devil Music (Tartini, tritone, Dies Irae)
  - Threnody II (electric insects)
  - God Music (tuned goblets)

- **Makrokosmos I-II** (1972-1974): notation influenced by "mannerism" of the *ars nova* composers (late 14th-century)
Baude Cordier: *Belle, Bonne, Sage* (c. 1400)
George Crumb: "Spiral Galaxy" from *Makrokosmos I* (1972)
George Crumb: “Crucifixus” from *Makrokosmos I* (1972)
George Crumb: *Songs, Drones, and Refrains of Death* (1962-70)

Stop strings with glass or plastic rod [so-called "bottleneck technique"]
Luciano Berio (1925-2003)
Luciano Berio (1925-2003)

Background

- Born in Oneglia, Italy.
- Contemporary of post WWII avant-garde composers Pierre Boulez, Karlheinz Stockhausen, György Ligeti, and Mauricio Kagel.
- Early interests in serialism and electronic music; co-founded Studio di Fonologia in Milan.
- Vocal works are among his most influential, particularly collaborations with his wife, singer Cathy Berberian.
- Quotation, collage, and transcription are important aspects of his output, including reworkings of Mahler, Puccini, Brahms, and Schubert.
Luciano Berio: *Circles* (1960)

**Instrument Placement**

- Percussion 1:
  1. 3 wood blocks, guiro
  2. wood chimes, Mexican bean
  3. leg drum, sand block
  4. marimba
  5. 2 small bongos
  6. 2 large bongos, tabla
  7. 3 tom toms
  8. 3 triangles
  9. hi hat, glass chimes
  10. 3 suspended cymbals
  11. tam tams
  12. 5 cencerros
  13. lujan
  14. 6 suspended chimes, celesta

- Percussion 2:
  1. 3 triangles
  2. 3 suspended cymbals
  3. medium tam tam
  4. hi hat, glass chimes, clap cymbal
  5. vibraphone
  6. 4 chinese gongs, glockenspiel
  7. tamburo basco, tabla
  8. 2 bongos
  9. snare drum
  10. 3 tom toms
  11. 2 congas
  12. foot-pedal bass drum
  13. 5 temple blocks
  14. maracas, wood chimes
  15. xylophone
Luciano Berio: *Circles* (1960)

Prefatory Notes

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Luciano Berio: CIRCLES (1960)
Prefatory Notes

PERC.

3 wood blocks
3 mexican boomerang
log drum

marimba
2 small bongos
2 large bongos
3 tam tam
2 small timpani
3 triangles
hi hat
3 susp. cymbals
3 tam tam
5 concheros
lujon
6 susp. chimes

VOICE

(approx pitch
optional, exact pitch)

HARP

3 triangles
1 tam tam
hi hat

vibraphone

4 Chinese gongs
1 tamburo basco
2 bongos
3 tom tom
1 foot pedal bass drum
5 temple blocks
xylophone

Also

1 guiro
1 wood chimes
1 sand block
1 tabla
also glass chimes
also glass chimes & clap cymbals

also celesta/sounds 1ct. higher!

beats the tempo

sticks:
1. hard
2. soft
3. wood
4. metal
5. brushes
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Luciano Berio: *Circles* (1960)
Luciano Berio: *Circles* (1960)
# The International Phonetic Alphabet

## Front Vowels
- [i]  ee as in seed
- [ɛ]  e as in sled
- [æ]  a as in had

## Central Vowels
- [ə]  er as in brother (unstressed)
- [ʌ]  u as in mud
- [ɜ]  ir as in British bird (stressed)
- [o]  er as in British brother (unstressed)

## Back Vowels
- [ɑ]  a as in palm
- [ɔ]  o as in hot
- [ɔ]  aw as in paw
- [u]  oo as in look
- [u]  oo as in boot

## The Nasals
- [m]  m as in mow
- [n]  n as in no
- [ŋ]  ng as in sing

## The Semi-Vowels
- [w]  w as in witch
- [j]  y as in you
- [r]  r as in raw

## Dipthongs
- [ou]  o as in no
- [ai]  i as in pile
- [ɔi]  oy as in toy

## Non-English Vowels
- [y]  uh as in German führer
- [æ]  ll as in Castillian calle
- [β]  b as in Spanish abogado

## Continuant Fricatives
- [f]  f as in five
- [v]  v as in five
- [θ]  th as in thy
- [ð]  th as in bath
- [h]  h as in hat
- [s]  s as in sue
- [ʃ]  ss as in mission
- [z]  z as in zip

## Stop-plosives
- [t]  t as in to
- [p]  p as in pat
- [b]  b as in bat
- [d]  d as in do
- [g]  g as in gone
- [k]  c as in cast

## Combinations
- [tf]  ch as in church
- [ʃt]  shed as in rushed
- [dʒ]  j as in judge

## Non-English Consonants
- [ç]  ch as in German ich
- [χ]  ch as in German Ach
- [ʁ]  r as in German rein
- [ŋ]  g as in German Wagen
- [y]  u as in German Mutter
- [œ]  o as in German Öffnen

## Other Signs
- [ː]  lengthen preceding sound
- [~]  nasalize the sound below
- [v]  trill the sound below
- [?]  glottal stop; found in substandard English; substituted for other plosives