Melodic Similarity

"Natural history" of similarity

Concept of similarity fundamental to organization of most art music

Types of similarity widely variant

Roles of similarity widely variant

Similarity in *art music* is **intentional**

Contour matches (accidental)

Target:
◦ Chant: "Lucis Creator"

Some hits:

◦ Bach *WTC*

◦ Bizet: *Carmen*

◦ Saint-Saens: *Carnival* (via Offenbach)

◦ Mozart: Symphony No. 41, IV

Melodic "invisibility" factors

- Elaboration of something simple
- Compound melodies (monophonic)
- Psycho-acoustic tricks (polyphonic)
- Rotating melodies
- Ambiguous foreground/background
- Metrical ambiguity

Elaboration

Bach, Art of Fugue (after Wiering et al.)

Contrapunctus I, alto.

Canon per Augmentationem in Contrario Motu. soprano. EMD 5.55284: PTD 5.90789

Classic features of melody: *symbols* vs *humans*

Eerola et al, MP (2001):
Statistical vs perceptual melodic similarity

◦ Material used: Finnish folk songs

Frequency distributions (symbols)

◦ Tones

◦ Intervals

◦ Durations

◦ Two-tone transitions

Frequency distributions (listeners)

◦ Tessitura

◦ Mean pitch

◦ Rhythmic activity

◦ Rhythmic variability

◦ Melodic predictability

Algorithmic vs Human Judgment
(Daniel Muellenseifen)

Works by Passion Fruit

- Repertory: popular

- Data: MIDI

- Processes include:

  - contour generalization

  - aliasing

  - fuzzification

Features:
- intervals
- contour
- rhythm
- harmony
- recurrent motifs

Class	Intervals	Name
-4	< -7	Big leap down
-3	-7, -6, -5	Leap down
-2	-4, -3	Big step down
-1	-2, -1	Step down
0	0	Same
1	1, 2	Step up
2	3, 4	Big step up
2	5, 6, 7	Leap up
4	> 7	Big leap up

Composers' perceptual tricks

Compound melody

One voice that
we hear as two

Distributed melody

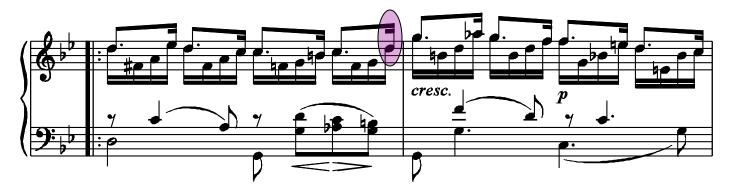Two voices that
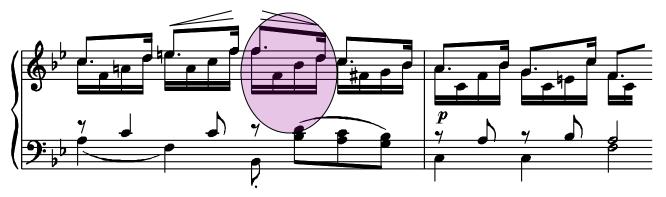we hear as one

Rotating melodies

B, T, B, T; A, S

Haydn: "Archduke" String Quartet

Perceptual tricks:
Ambiguous foreground/background

Schubert

Perceptual tricks: **Metrical ambiguity**

Ratner

Brahms

Col intimissimo sentimento ma senza troppo marcare la Melodia

A similarity study: The Ballo di Mantova

Fug-gi fug-gi fug-gi da que-sto cie-lo, aspr' e du-ro, spie-ta-to ge-lo

Prima Parte

The "Ballo di Mantova," cont.

De ge - bo - den da - gen Viert, o Ca - tho - lijk: Dat ghy Godt mooght be -

- ha - gen, En win - nen 't he - mel - rijck.