Compositional schemata

CS 275B/Mus 254

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1. Schema theory

Passing, Contrary Motion

Passing, Parallel Motion

Monte

Fonte

Gjerdigen's applications

How do these micro-models combine with better-known elements of melodic construction?

Ordered approaches to composition schemes

1. **Solfeggio** (voice pedagogy)
2. **Basso continuo harmonization** (performance)
3. **Expandable formulae** (phrase-level expansion)
4. **Partimenti** (expansion of continuo realization)
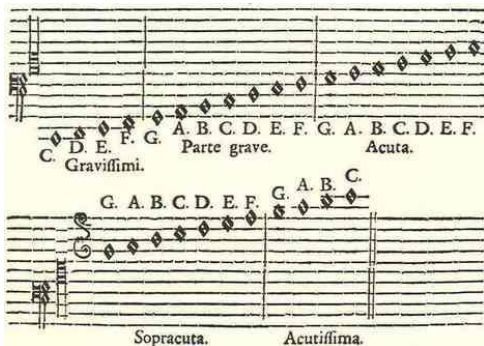
2. Solfeggio

Hexachordal era

Diatonic era

Emphasis on degree of scale (earlier hexachord)

3. Basso continuo harmonization (18th cent.)

- **Francesco Gasparini (1708)**
- Johann David Heinichen
- Lots of others
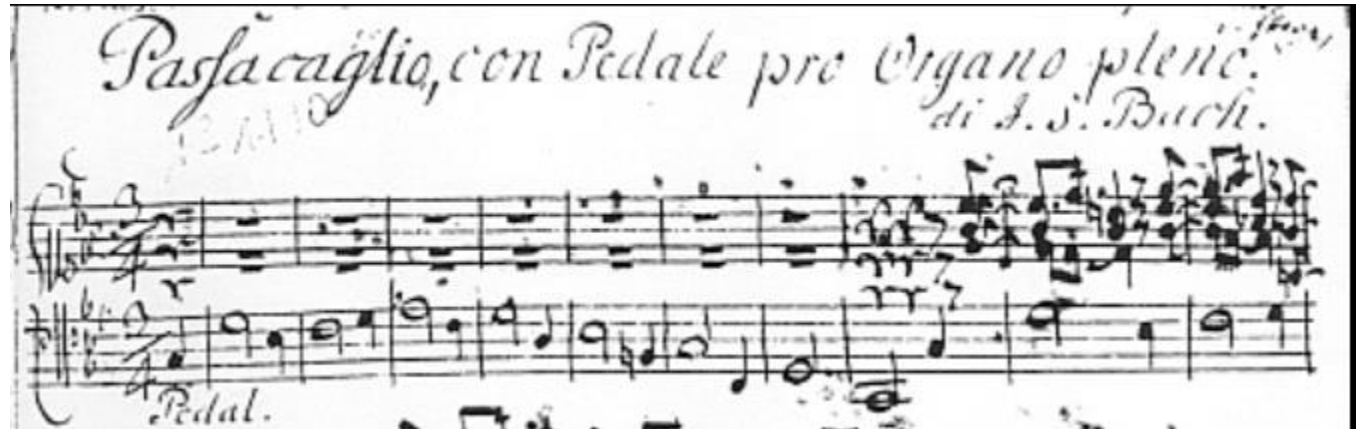

Emphasis on completing harmony

3. *Bassi ostinati* (repeated basses)

- Harmonization prescribed by tradition

- Popular on plucked, strummed instruments (16th-18th centuries)

- Frequently used for traditional dances

- Also used on stage for mad scenes

- Later used in organ music, art music

Folia with bounded melody

Folia
Chaconne
Passacaglia
Sarabande
…many more

Passacaglia BWV 582

Ostinato types and origins

From music for 5-string Spanish guitar (16th century onward)

First appearance: Portugal, 1577

Common "obstinate bass" patterns

- Folia
- Passacaglia
- Romanesca
- Bergamasca

The Folía ostinato [et al.]

Corelli, Op. 5, No. 12 (1700)
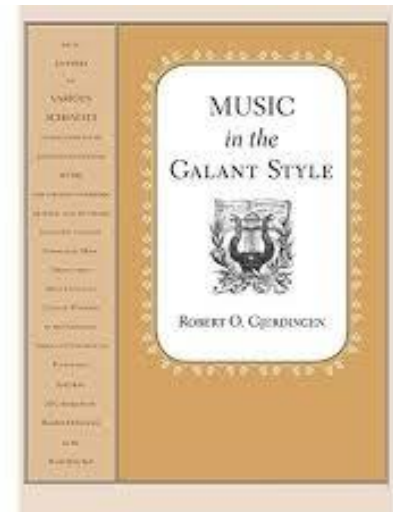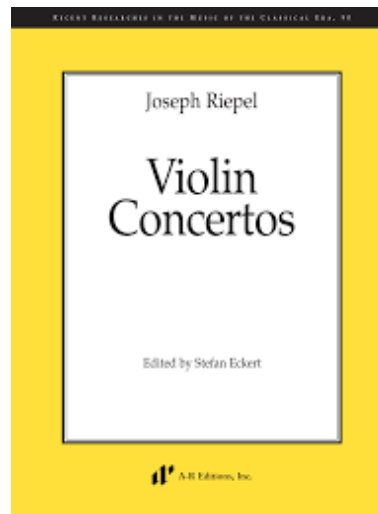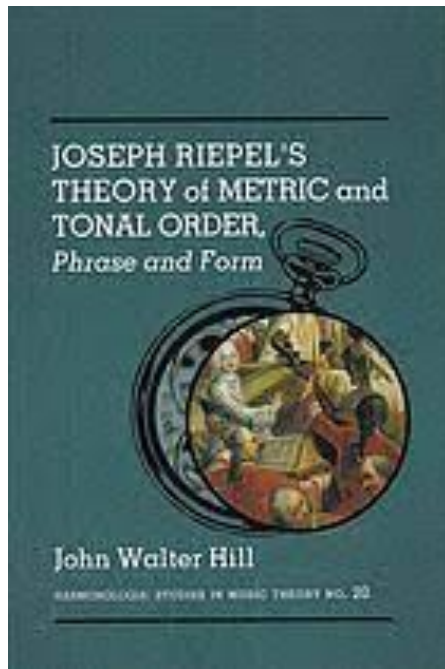

Vivaldi, Op. 1, No. 12 (1705)

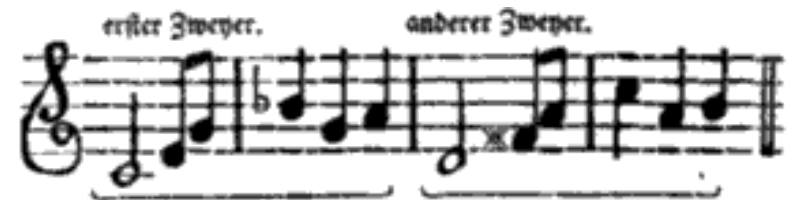| Gm (i)	D⁷ (V⁷)	Gm (i)	F (VII)	Bb (III)	F (VII)	Gm (i)		D⁷ (V⁷)
Gm (i)	D⁷ (V⁷)	Gm (i)	F (VII)	Bb (III)	F (VII)	Gm (i)	D⁷ (V⁷)	Gm (i)

Other ostinato users

- Corelli, Scarlatti, Vivaldi, J.S. Bach, C.P.E. Bach
- Geminiani, Salieri, Cherubini,
- Beethoven, Liszt, Rachmaninoff
- Tangerine Dream, Britney Spears

4. Riepel: Melodic studies
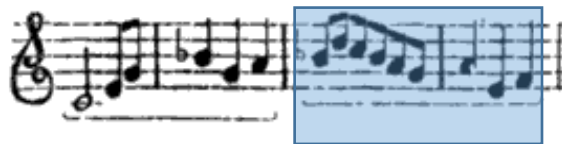
Melodic formulae by Josef Riepel
(1752, 1775)

- **Melodic structure**
  - Metric and tonal order synchronized
  - Given minuet melody (A), these are elaborations

  - 1ˢᵗ elaboration

  - 2ⁿᵈ elaboration

  - 3ʳᵈ 4ᵗʰ elaborations
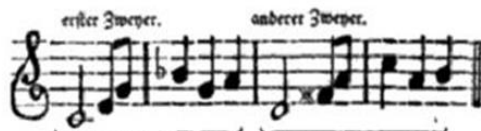
Emphasis on top voice

Josef Riepel (1752, 1775)

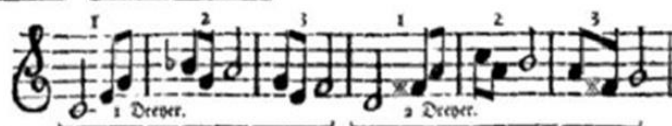- **Melodic structure**
  - Metric and tonal order at synchronized
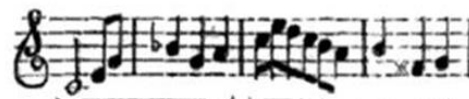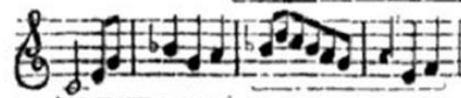 - Given minuet melody (A), these are elaborations

  - 1st elaboration

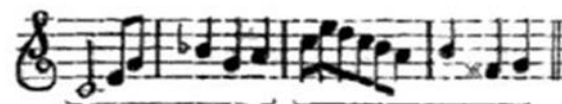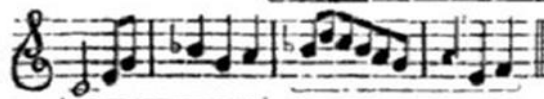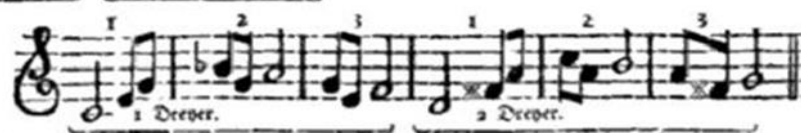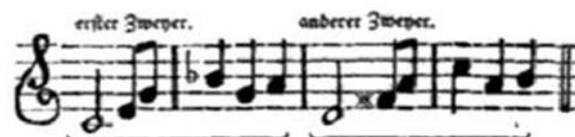 - 2nd elaboration

  - 3rd 4th elaborations

Josef Riepel (1752, 1775)

- **Melodic structure**
  - Metric and tonal order at synchronized
  - Given minuet melody (A), these are elaborations

  - 1st elaboration

  - 2nd elaboration

  - 3rd 4th elaborations

5. Heinrich Christoph Koch (1749-1816)— phrase structure

- Important theorist of 18th century
  - 3-vol. **composition manual** (*Versuch einer Anleitung zu Composition…*1793)
    - Strong emphasis on **rhythm and accent**
    - Accent: (a) oratorical or (b) pathetic [**mood**]
  - *Musikalisches Lexikon*, 1803

- Very influential in recent years
  - Christopher Hasty: *Meter as Rhythm (1997)*
  - Riepel studies
  - Many Mozart and Beethoven studies

Koch: Sentence structure
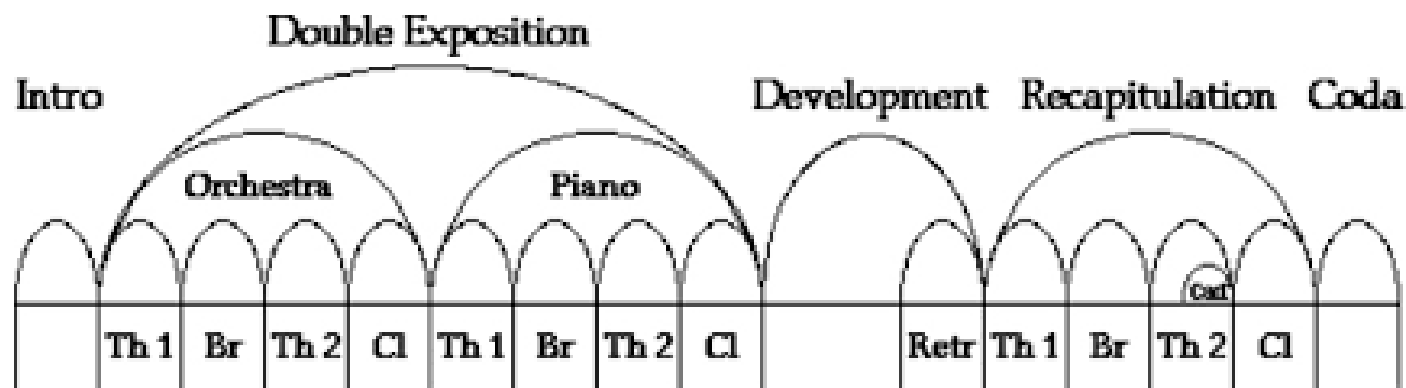

Sentence structure

Phrase rhythm

J. P. Ito: Hypermeter

- "Hypermetrical Schemas, Metrical Orientation, and Cognitive-Linguistic Paradigms," JMT 57/1 (2013), 47-85.
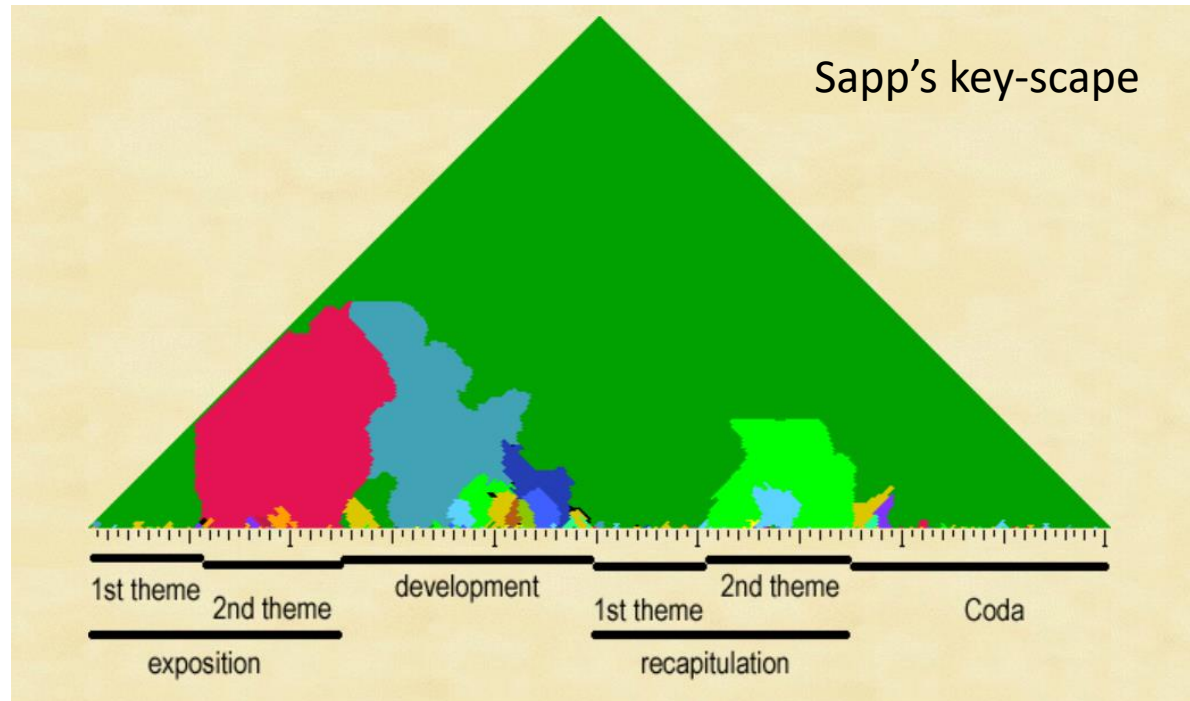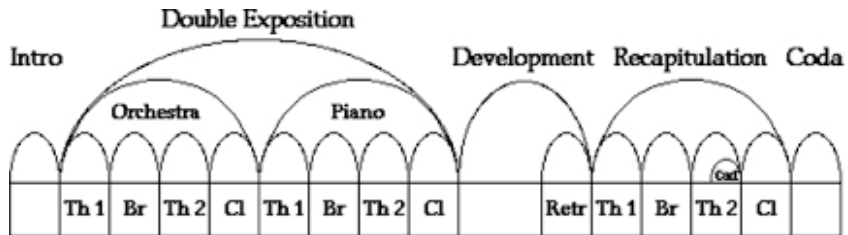- Looks at three-way reciprocity

Hypermetrical units

Example 1. Beethoven Piano Sonata op. 31/3, i, mm. 1–8

Koch's sonata-allegro form (concerto)

Double Exposition

Intro — Orchestra — Piano — Development — Recapitulation — Coda

| | Th 1 | Br | Th 2 | Cl | Th 1 | Br | Th 2 | Cl | | Retr | Th 1 | Br | Th 2 | Cl | |

Koch's sonata-allegro form

Sapp's key-scape

6. Partimenti

Recommendations to improvise new compositions

- Neapolitan in origin

- Used to enable adolescents to compose

- Most masters obscure today but methods pervasive

- *Fenaroli's rules predominate*

Codification of *partimento* theory

- Giorgio Sanguinetti (OUP book 2012)
- Robert Gjerdingen (various books and papers)
- *Partimento* website
- Many other theorists

Three classes of rules, all elastic

1. **Basic axioms**

    Cadences: all follow I-V-I pattern but V is extensible

        I-V-I

        I-6/4-5/3-I

        I-II-V-I   s

Three classes of rules...

2. **Rule of the octave**

- Each scale degree is associated with one harmony

- Ascending, descending schemes of harmonization

- 6/5 chords are used on scale degrees 4 and 7.

Three class of rules….

3. Dissonances (suspensions)

- *Suspensions* are dissonances

- Passing-tone dissonances considered result of diminution.

Rule of the octave: *ascending scale*, 3 positions (inversions)

Rule of the octave, *descending scale*

How to elaborate the Rule of the Octave

1. Introduce smaller note denominations

Methods of elaboration...

2. Vary the rhythm in the added figurations

Note similarity to species counterpoint

Methods of elaboration, cont....

3. Introduce chordal harmonization

Methods of elaboration, cont...

4. Introduce chromaticism

Elaboration…

5. interleave one descending (ascending) line in

Methods of elaboration cont….

6. Vary direction of bass (and treble) line

(b)

7. Species counterpoint: J. J. Fux

Johann Joseph Fux (*c*1660-1741)

- Authority on 16th-century Renaissance polyphony

- As codified in the 18th century

- Studies in Rome

- Head of music at the imperial court, Vienna (1715..)

***Gradus ad Parnassum* (1725)**

Gradus ad Parnassum (1725)

Steps to Mt. Parnassus

Part One: *Musica Speculativa*

i.e. tuning, acoustics, and their implications

- Mathematically exact intervals result in **half steps** that may be
    - Larger or
    - Smaller
- Equal temperament (ET) a response to awkwardness of split keys in short octaves
- ET a practical solution to a physical problem

Gradus ad Parnassum (1725)

Steps to Mt. Parnassus

Part Two: *Musica Prattica*

Purpose*: "*to invent a simple method by which a novice can progress, step by step"

- Counterpoint
- Fugue
- Double fugue

"Theory without practice is useless"

Steps (*species*) of the path (Gradus)

- *First*: (whole) note against note
- *Second*: (whole) note against half-note(s)
- *Third*: (whole) note against quarter-note(s)
- *Fourth*: Introduces suspensions, of turning figures (*cambiate*)
- *Fifth* (florid): **Use of mixed rhythmic values**

The *Gradus* is only book from Bach's theory library to survive.

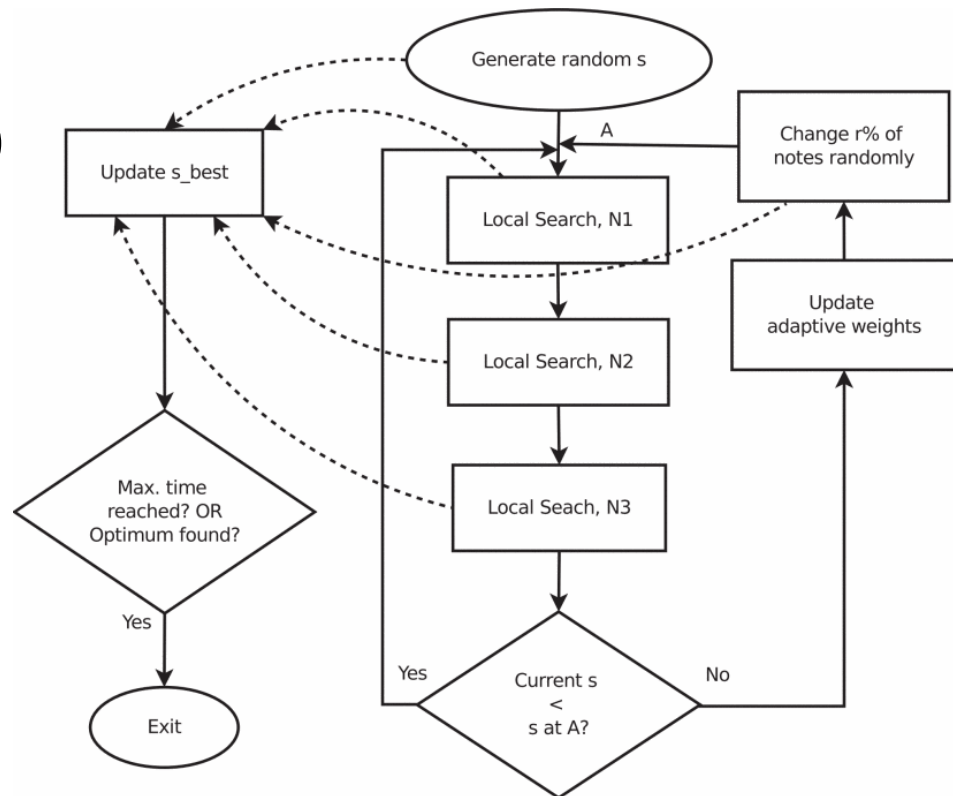# Species: Second, Third, Fifth

Second

Cantus firmus

Third

Cantus firmus

Fifth

Cantus firmus

Herremans and Soerensen: *Fux,* an Android app the generates fifth-species counterpoint

- Relies on Variable Neighborhood Search (VNS)
- VNS=local search strategy
- Here: three neighborhoods

Herremans, Soerensen: Musical details

Edit-distance inspired accommodations in *cantus firmus*

- Original;
- Swap;
- Change;
- Change 2

Fig. 2.
» Show in Context

(a) Original

(b) Swap move

(c) Change1 move

(d) Change2 move

Herremans, Soerensen: Musical details

Edit-distance inspired accommodations in cantus firmus

- Original; Swap; Change; Change 2

[several violations of cp rules: tritones, hidden fifths....]