

Introduction to Musical Corpus Studies

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13 November 2020

Musikwissenschaftliches Seminar - Universität zu Köln - WS 2020/21

Today

Introduction (16:00–17:20)

- I. What are Musical Corpus Studies?
- II. Issues
- III. Examples
- IV. Organization of the course
- V. Questions

— *Break* —

Melody I (17:40–19:00)

Resources

- main organization via ILIAS
- literature
- forum
- Zoom link (you are all here)
- external website: <https://fabianmoss.github.io/intro-corpusmus>
 - general info
 - course materials (updated after each session)
- HfMT students: by your group members

- 3 CPs = 90 SWS
 - 24 SWS presence in seminar
 - 24 SWS preparation of and follow-up on course materials
 - 42 SWS reading of literature and writing of report

Group work

- you will meet with your group in the breakout rooms
- discussions
- exercises

Report

- report due on **31 January 2021, 23:59h**
- 6–8 pages
- suggested structure
 1. Introduction
 2. Discussion
 3. Issues
 4. Various
 5. Contributions

I. Computational Music Analysis

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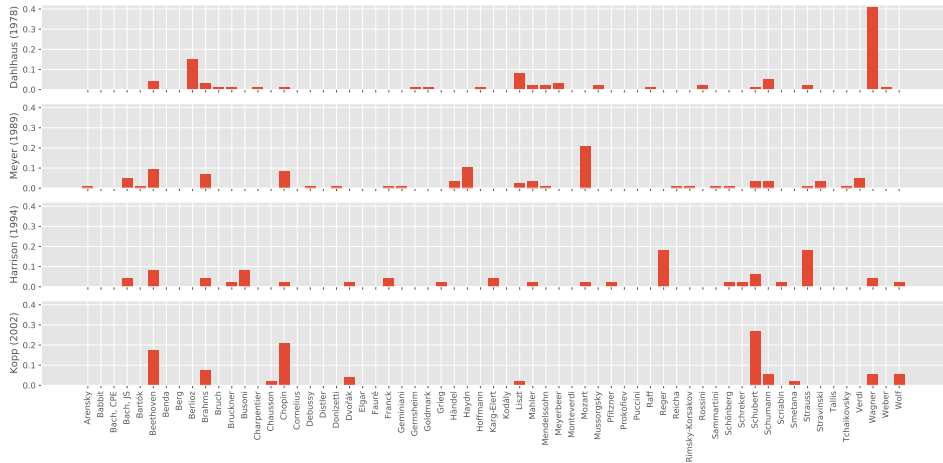
Potential of Computational Music Analysis

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Definitions of Tonality

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“the relations between musical elements, e.g. notes or chords in a corpus”

(Moss, 2019)

I. Computational Music Analysis

Potential of Computational Music Analysis

1. complementing music theory (e.g., addressing potential biases)
2. resolving ambiguities in terminology
3. empirically validating theoretical assumptions & asking entirely new questions

II. Examples

Harasim, D., Moss, F. C., Ramirez, M., & Rohrmeier, M. (in press). Exploring the foundations of tonality: Statistical cognitive modeling of modes in the history of Western classical music. *Humanities & Social Sciences Communications*

Research questions

1. How can the concept of a mode be operationalized?
2. How can we find modes automatically?
3. Can we do it without knowing how many modes there are and what they look like?
4. How do modes change historically?

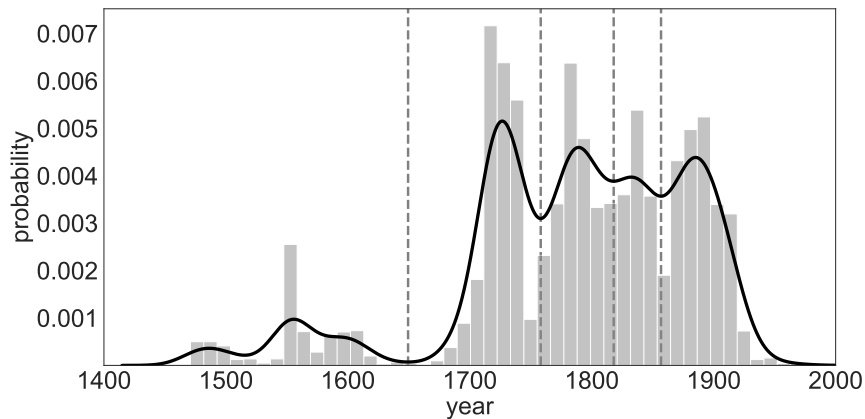


Figure 1: Historical distribution of pieces in the corpus.

The model and its assumptions

1. pieces can be represented by pitch-class counts
2. enharmonic equivalence
3. transpositional invariance

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⇒ explicit modeling

Automatically finding modes

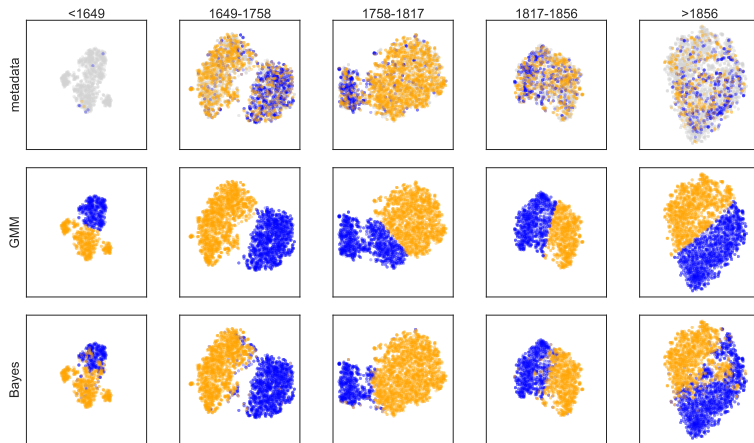


Figure 2: Three models for automatic mode finding.

Quality of the model

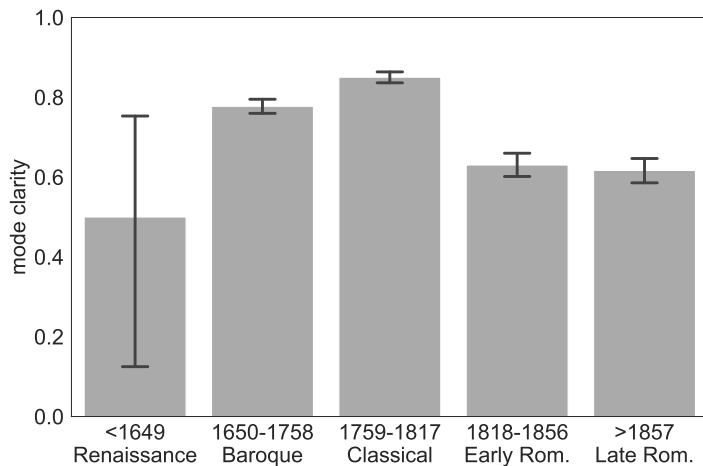


Figure 3: Accuracy scores of our model in five historical periods.

The major and minor modes

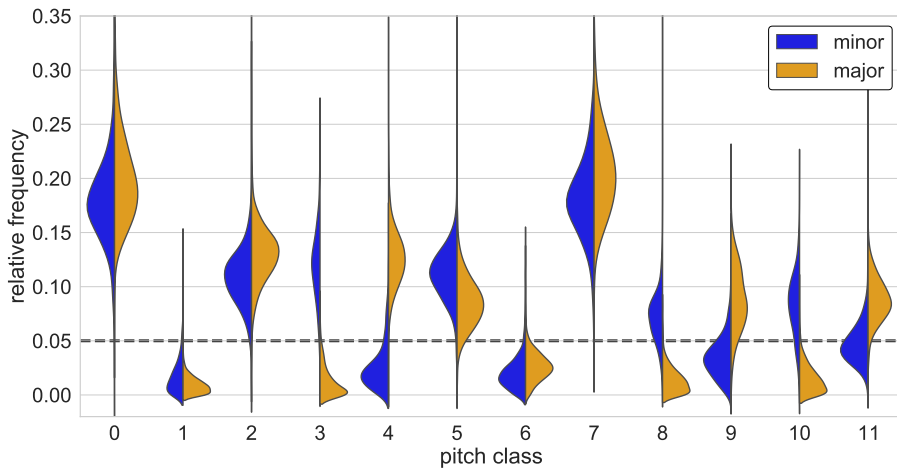


Figure 4: Pitch-class distribution of the major and minor modes.

Modes in the Renaissance

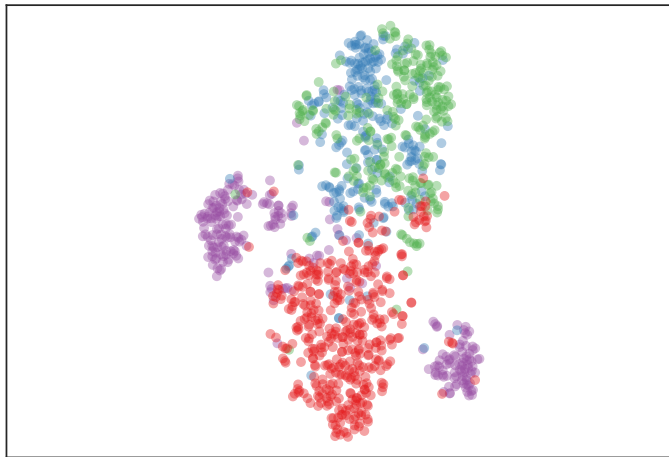


Figure 5: Clustering into four modes in the Renaissance.

Modes in the Renaissance

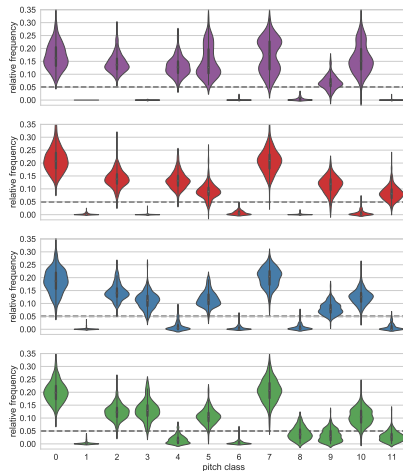


Figure 6: Pitch-class distribution of Renaissance modes.

References

- Harasim, D., Moss, F. C., Ramirez, M., & Rohrmeier, M. (in press). Exploring the foundations of tonality: Statistical cognitive modeling of modes in the history of Western classical music. *Humanities & Social Sciences Communications*.
- Hyer, B. (2001). Tonality. In S. Sadie & J. Tyrrell (Eds.), *The New Grove Dictionary of Music and Musicians* (2nd ed., pp. 583–594). Macmillan Publishers.
- Moss, F. C. (2019). *Transitions of Tonality: A Model-Based Corpus Study* (Doctoral Dissertation). École Polytechnique Fédérale de Lausanne. Lausanne, Switzerland.
<https://doi.org/10.5075/epfl-thesis-9808>