

Research Plan

Cultural Analytics, Corpus Studies, Empirical Music Theory

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February 22, 2022

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Overview

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Digital Humanities and Cultural Analytics

How can we preserve the rich cultural heritage of the past? How can we make it accessible for anyone? Which tools do we need to enable everyone to engage with these treasures?

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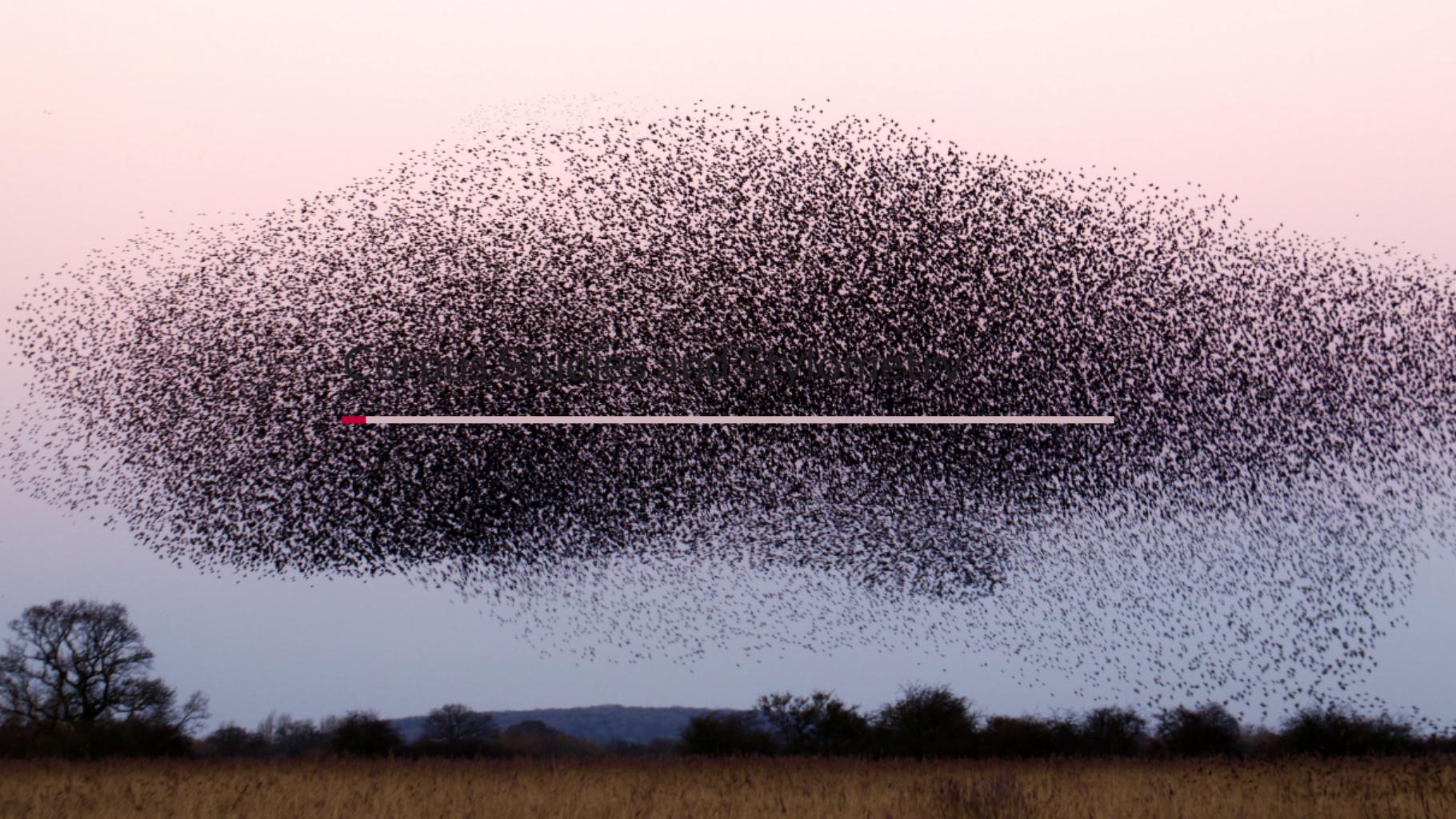
Present

- Covid19 Communities
- CREATE

Future

- analysis of SoundCloud platform, e.g. with Bernhard Rieder, Anne Helmond, Ashley Burgoyne...
- *r/musictheory* reddit
- *#musicscience/#musictheory* twitter

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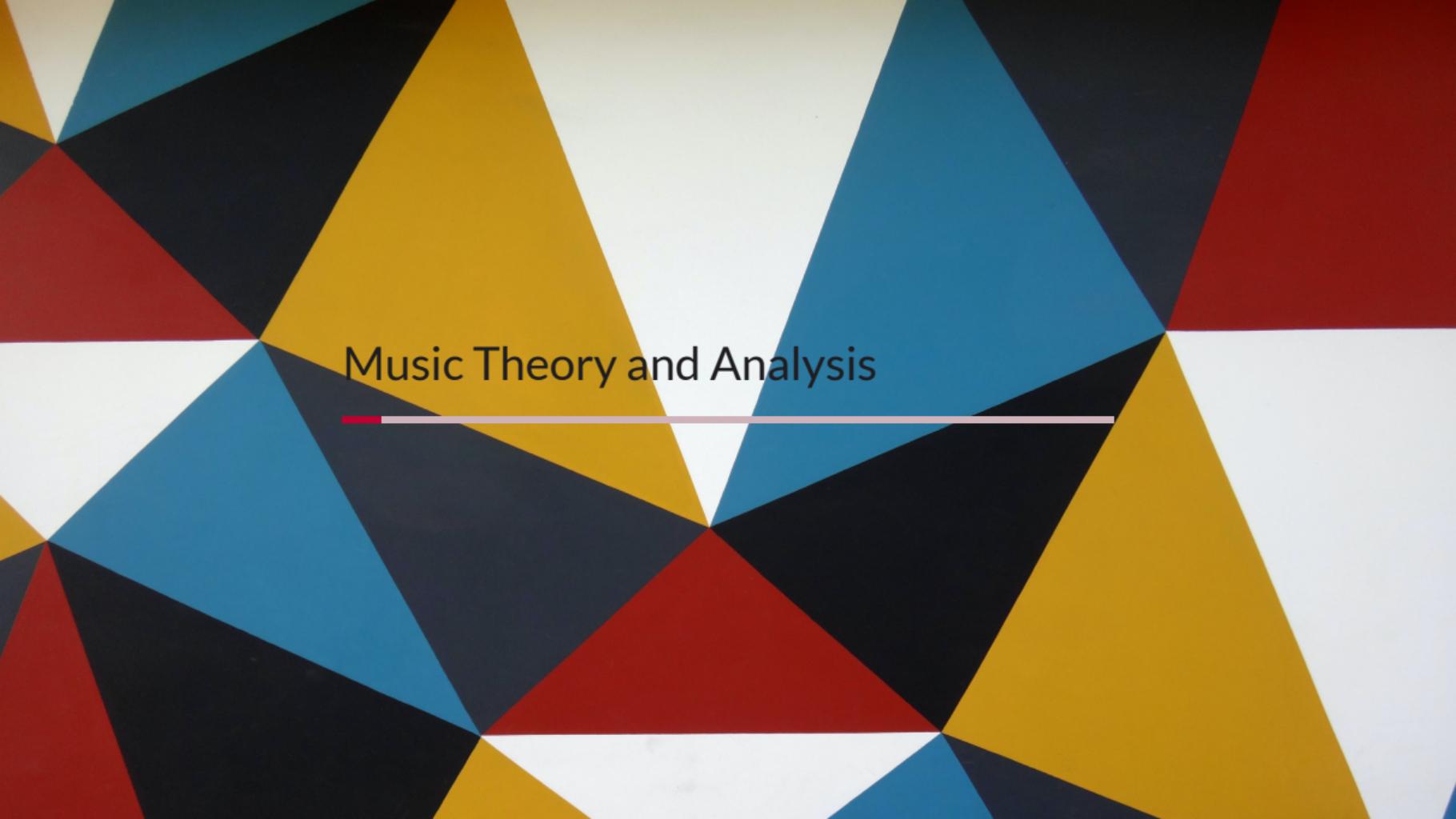
Which patterns do emerge when we move from analyzing individual cultural artefacts to collections? Can we create datasets that are representative for a certain historical period or style? Is it possible to observe trajectories that allow us to speak of cultural evolution?

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- Shuxin Meng (Lausanne): Chinese folk music project
- Philippine Des Courtils (Lausanne): Classification of Baroque composer styles
- Mathis Trutnau (Cologne): Harmony in Jazz



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Music Theory and Analysis

Which underlying structural relations can be identified in a musical composition? How can these structures be described precisely, using mathematical and formal models? Can we measure music? Which intricate aspects of a piece appear remarkable?

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Music Theory and Analysis

- Rework earlier music-theory work for book chapter (by end February) (Riemann)
- Wrap-up of CROSS project (by end March)
 - musicology paper with Maik Köster (Cologne)
 - digital humanities paper with Colline Métrailer, François Bavaud (Lausanne)
 - project report
- big-data project on musical spaces with Robert Lieck (Durham) (TBD)
- Giovanni Affatato (Milano): interactive music analysis tool
<https://dcmlab.github.io/MIDFT/>
- Roberto Goelzer (Lausanne): Automatic rhythm generation
- Workshop “Representing Harmony: Goals and Challenges (Lausanne, 2022?)”
- MEI Guidelines

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Music Perception and Cognition

What makes us listen to music? How do we perceive structure in music? Why is music so closely tied to our emotions? Why does music move us?

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Music Perception and Cognition

I am interested in people's **perception of structure in music** and my overarching goal is to better understand how musical structure relates to human psychology.

How music affects us does not only lie in the signal, the acoustical features of music. We found that it depends on aspects of the **musical style** as well as the **listeners' expertise** how pleasant an acoustically dissonant harmony sounds (**Popescu2019_PleasantnessSensoryDissonance**), and that the perception of **tonal hierarchies** differs between different musical modalities (chords vs. scales) (**Herff2021_EvidenceCognitiveTonal**). Currently, I am finalizing the manuscript for a study on the perception of **symmetry** in musical scales (**MossHerff2022**)

I plan to extend this research along two lines: **1)** broadening the scope of structural features and **2)** widening the cultural range (Templeton grant and potential Totoli

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Cultural Evolution Society Transformation Fund

- “Cultural evolution of sacred song: A quantitative case study of transmission processes in Gregorian and Byzantine chant”
- Templeton Foundation; Jan 2023 – Jun 2024; 90k GBP; notification by March
- Tuomas Eerola (Co-I; Durham), Sally Street (Durham), Bas Cornelissen (UvA), Polykarpos Polykarpidis (Athens), Patrick Savage (Keio)

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Research

Accepted

- "Reading Music Theory from a Distance: A Corpus Study of the *Thesaurus Musicarum Italicarum*"
with Coline Métraller, *Congress of the International Musicological Society*
- "Revisiting Tong Yun San Gong theory in Chinese music: a corpus study of Chinese folksongs"
with Shuxin Meng, *Analytical Approaches to World Music 2022*

Submitted

- "midiVERTO: A Web Application to Visualize Tonality in Real Time"
with Giovanni Affatato and Daniel Harasim, *Mathematics and Computation in Music*

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In preparation

- Phases of the dualism debate
with Maik Köster, *Jahrestagung der Gesellschaft für Musikforschung*
- “Which features help classify Baroque composers with Random Forest?”
with Philippine des Courtils, *Society for Music Perception and Cognition* (deadline: 15 February 2022)
- “Unsupervised Cross-Cultural Inference of Modes”
with Daniel Harasim, *International Society for Music Information Retrieval*
- Presentation midiVERTO app + new analysis
with Daniel Harasim and Giovanni Affatato, *Digital Libraries for Musicology* (deadline: TBA)

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Education

Methods and techniques

- Complete *Statistical Rethinking* course
- Learn more about Cultural Evolution models, either within the Templeton CE scheme, or independently in collaboration with TE and SS
- Generalized linear mixed models learning path with Steffen Herff

Career development

- Project management
- Leadership skills

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References

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