

Defining Makam-Specific Features through Degree Occurrences and Cadences Analysis

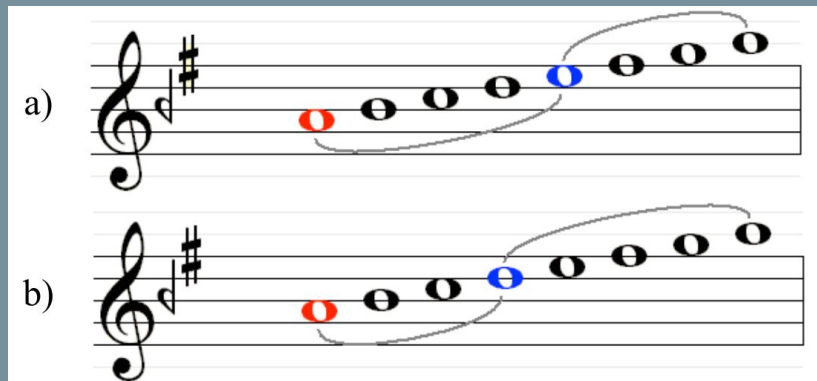
Ana Pandrea and Darius Petermann

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Makam System in Turkish Music

Makam: Composed of **tetrachords** over **pentachords** (or the other way around). Thus, some makams share the same scale.

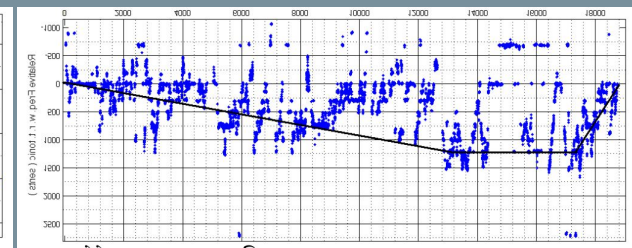
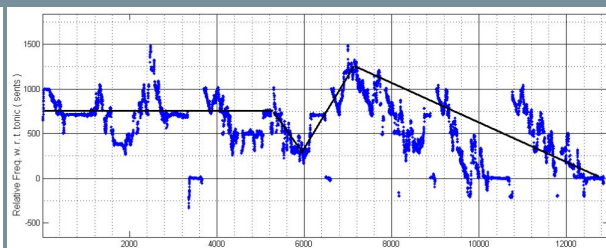
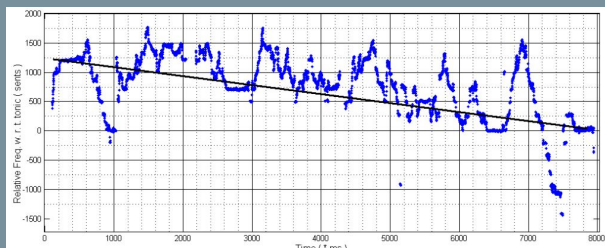


Scales for makamlar: a) Hüseyni, Muhayyer, Gülizar, b) Neva, Gerdaniye, Tahir.

Makam System in Turkish Music

Makam Characteristics: Beyond the Concept of Scale...

- Overall Melodic Progression of the **Seyir**

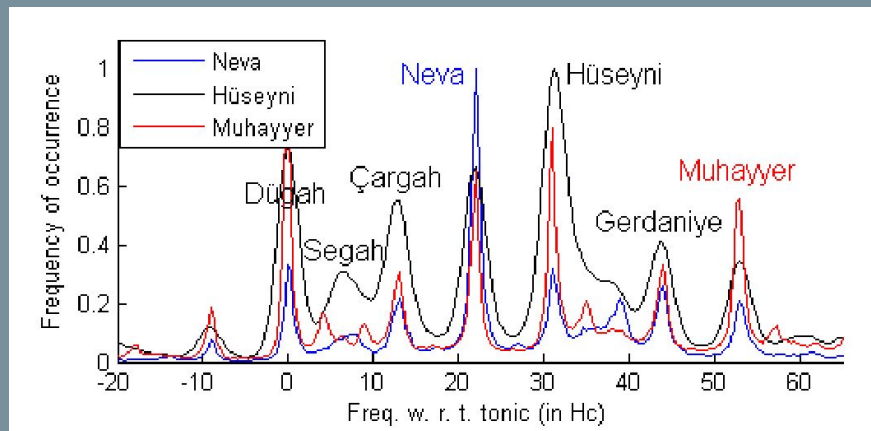


Melographs from three Makams: Uşşak, Hüseyni, Muhayyer

Makam System in Turkish Music

Makam Characteristics: Beyond the Concept of Scale...

- Scale degree occurrences in the performed melodic progression (**Seyir**):



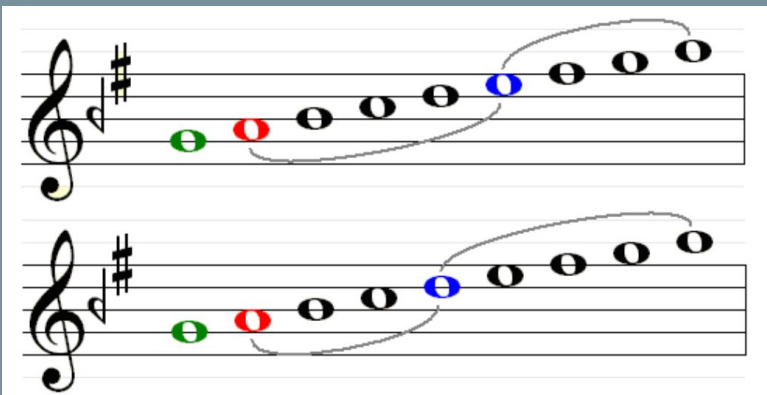
Pitch histogram templates of three makams: Neva, Hüseyni and Muhayyer

Proposed Research Question:

Addressing the problem of shared scales and tonic across Makams:

- Pitch Histograms: Time variation is lost through pitch histogram
- Overall Melodic Progression: Too broad and not granular enough

Hüseyini, Muhayyer, Gülizar



Neva, Gerdaniye, Tahir.



Proposed Research Question:

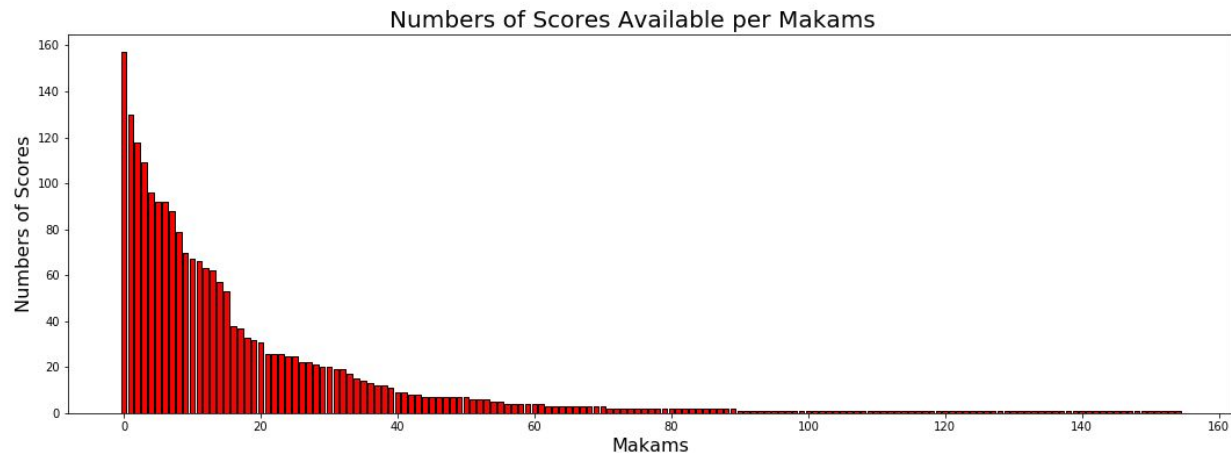


Are cadences a relevant and meaningful feature for Makam detection ?

Proposed Research Methodology

Dataset: *SymbTr: Turkish Makam Music Symbolic Data Collection*

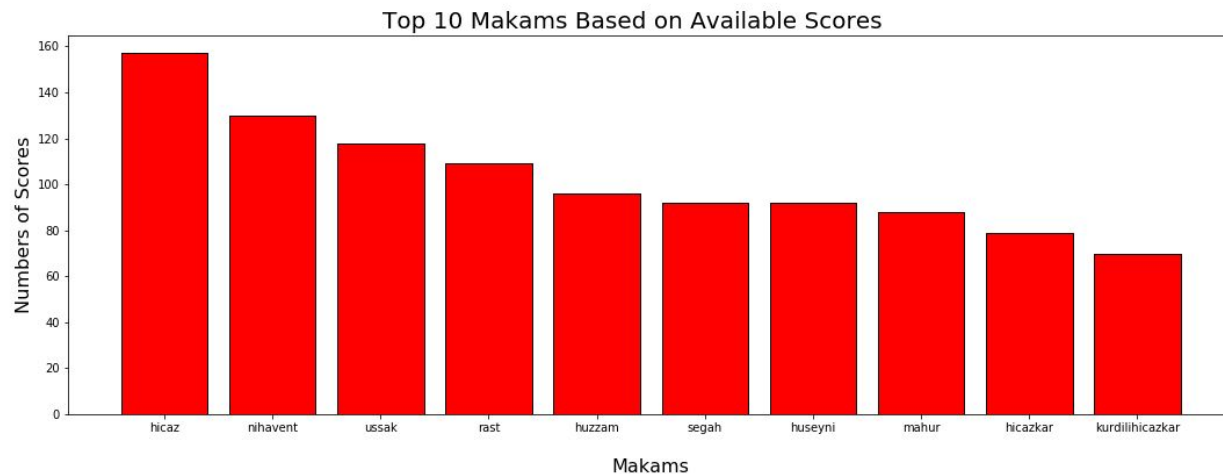
Contains more than 150 different Makams:



Proposed Research Methodology

Problem: Highly imbalanced data

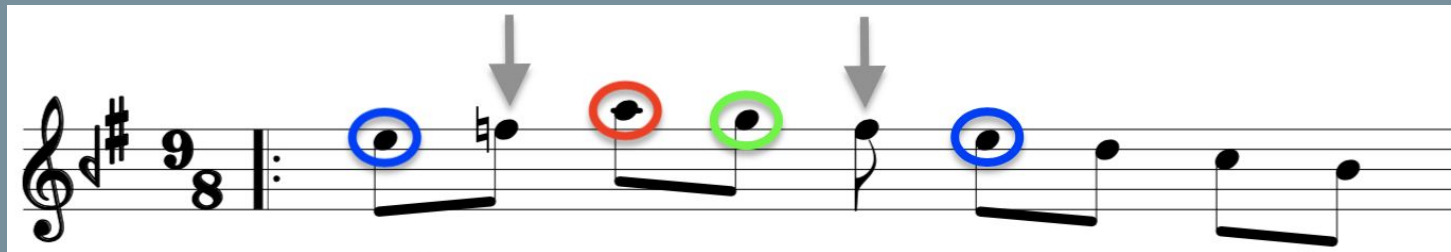
Threshold of required number of scores per Makam: **~70 Scores**



Proposed Research Methodology

music21 processing steps:

1. Define tonic, leading tone, & dominant for each of the selected Makams (10 total)
2. Seek for each of these scale-degree in the Makams' scores
3. Look at the adjacent notes for each of the degrees



Makam Huseyni: tonic, dominant, leading tone, special passing tone

Expected Results

- For each of the **10 makams**, we obtain a **pitch histogram** depicting the adjacent notes for each **dominant**, **tonic**, and **leading tone** scale degrees.
- From there, we can build a **table** containing the clear **recurrent notes** that occur more often than others across the various makams.
- These histograms will (hopefully) be representative of the **scales' primary degrees** and their respective **context** inside a Seyir.

Thank You !

References:

- Bozkurt, Baris. "Features for analysis of Makam music." (2012).
- Bozkurt, Baris & Ayangil, Ruhi & Holzapfel, André. (2014). *Computational Analysis of Turkish Makam Music: Review of State-of-the-Art and Challenges*. *Journal of New Music Research*.