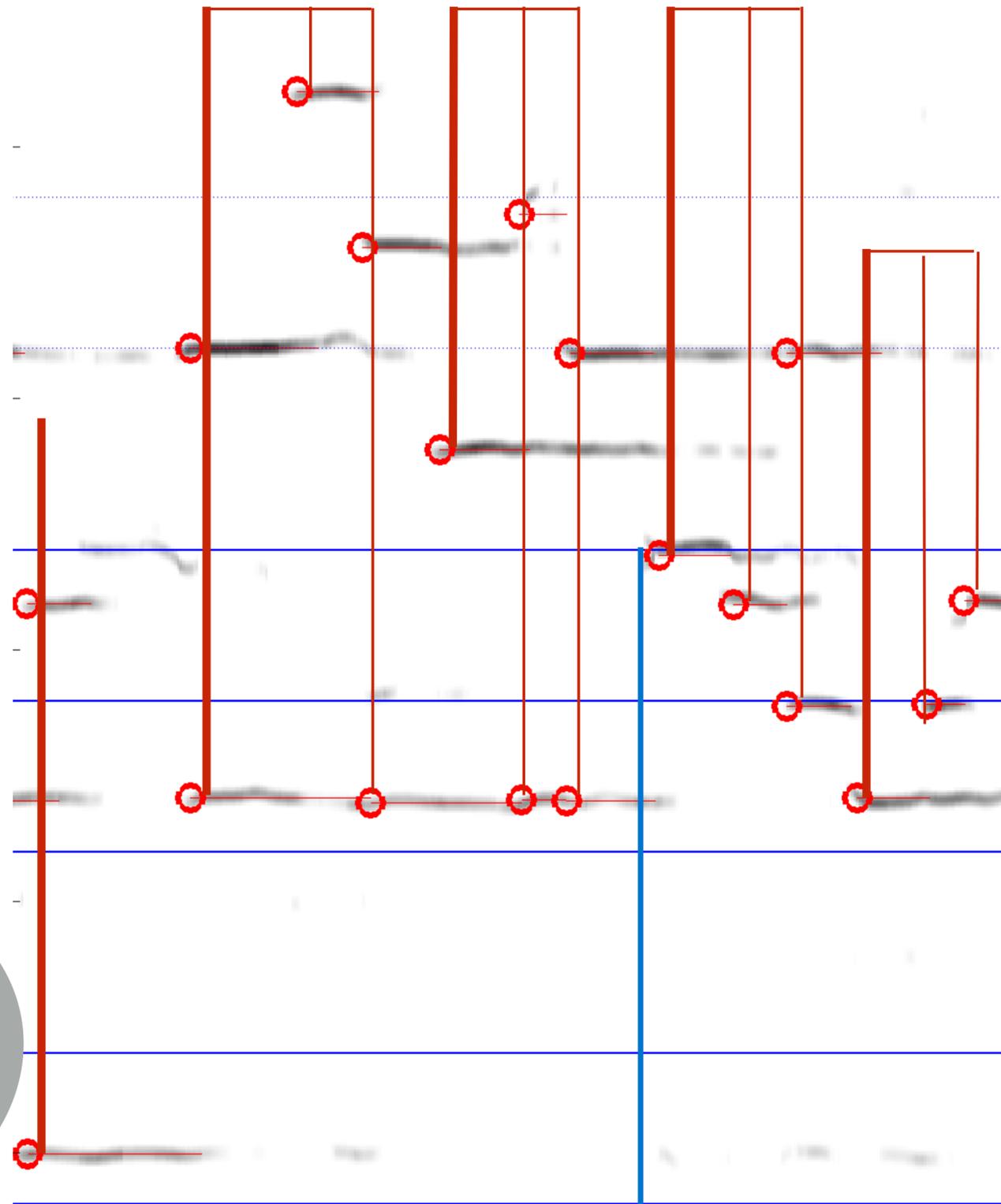


# Tracking beat in Hardanger fiddle music

Olivier Lartillot, Mats Sigvard Johansson — MIRAGE

# Previous approaches in beat tracking

- ✦ Signal-processing approaches
  - ✦ (BeatRoot, by Simon Dixon)
  - ✦ based on a prior estimation of tempo
- ✦ Deep learning approaches
  - ✦ (Böck & Krebs)
  - ✦ require training data



# Challenges

- Beats of variable duration
- Beat does not correspond to clear accents

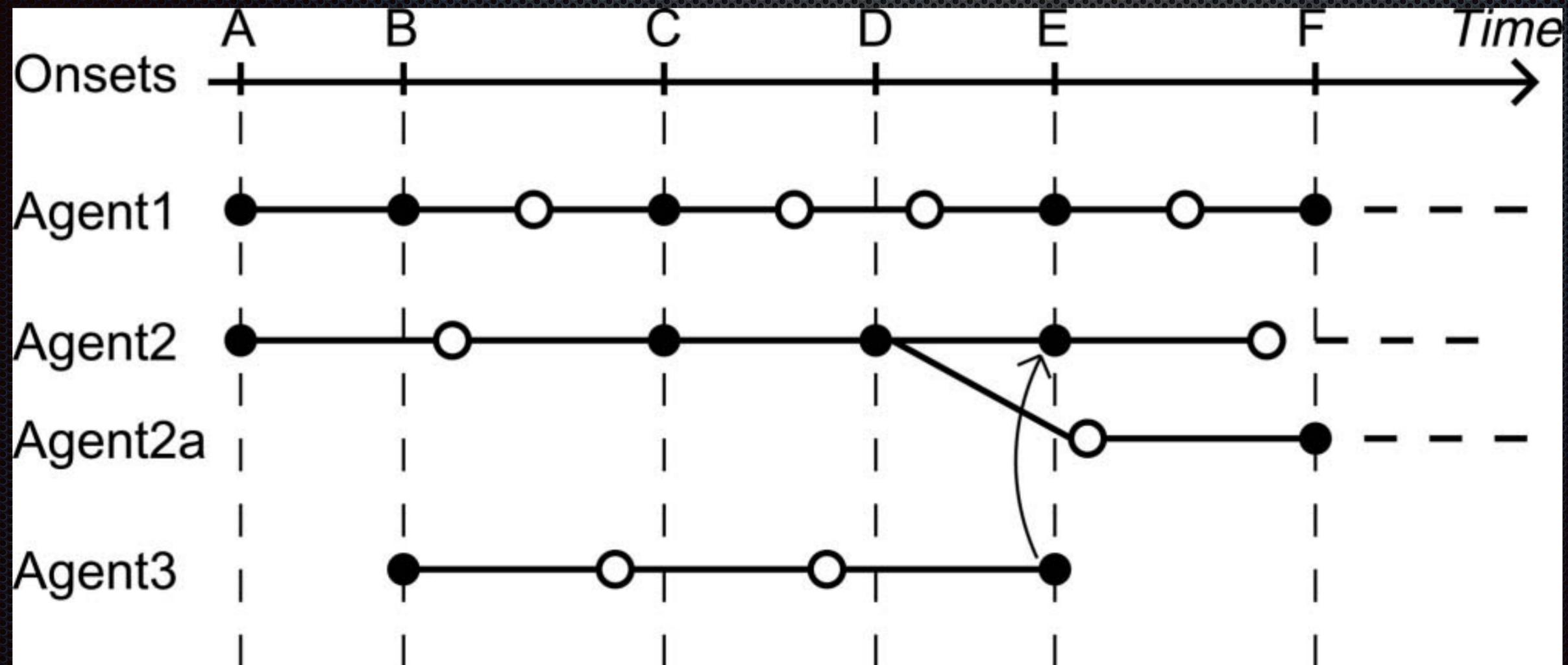
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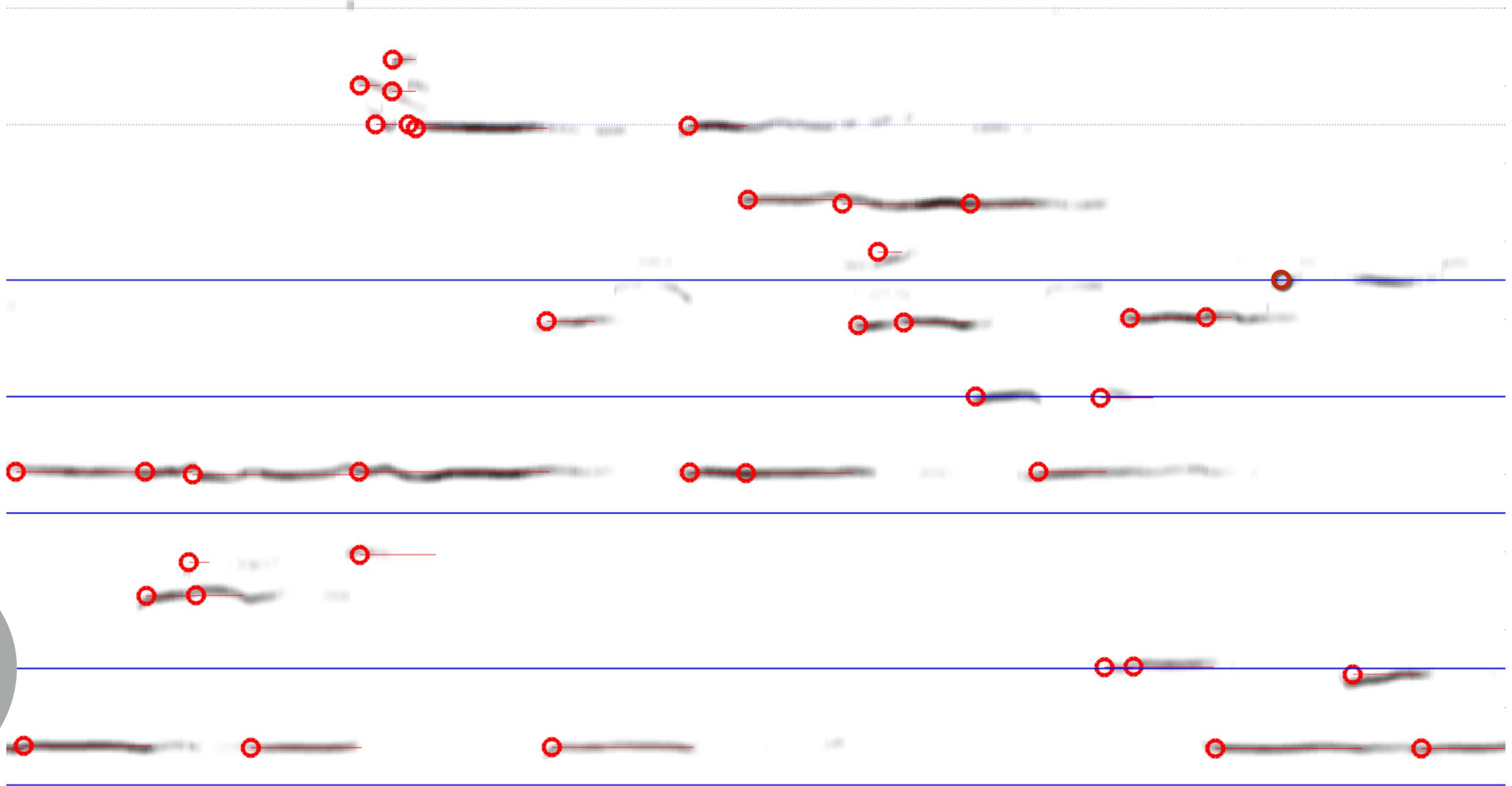
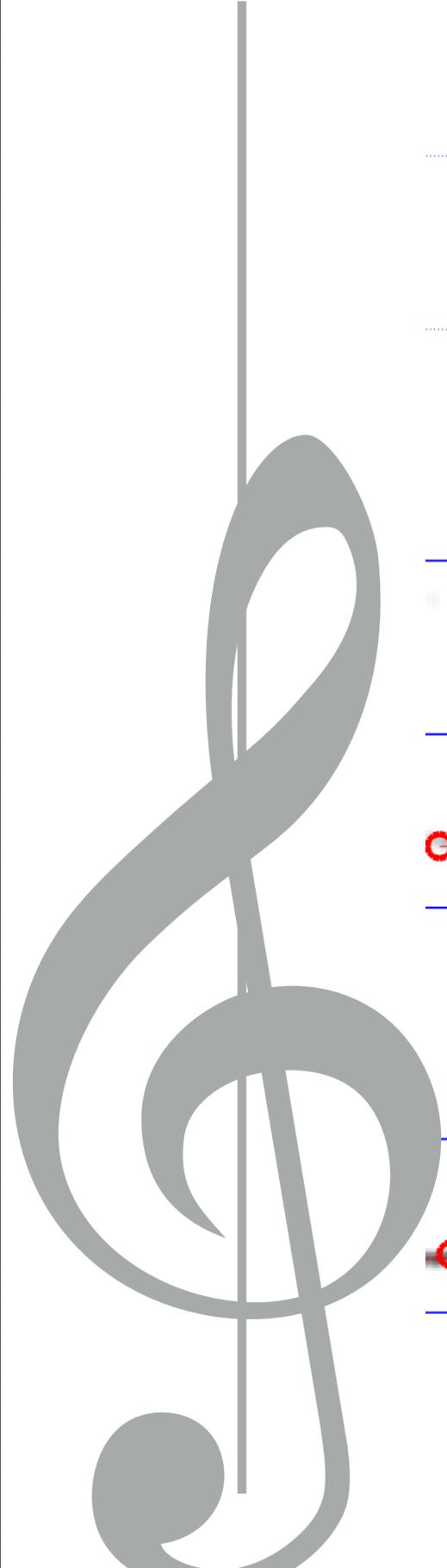
# Proposed strategy

- modeling processes that progressively infer beats while scanning the music sequence chronologically

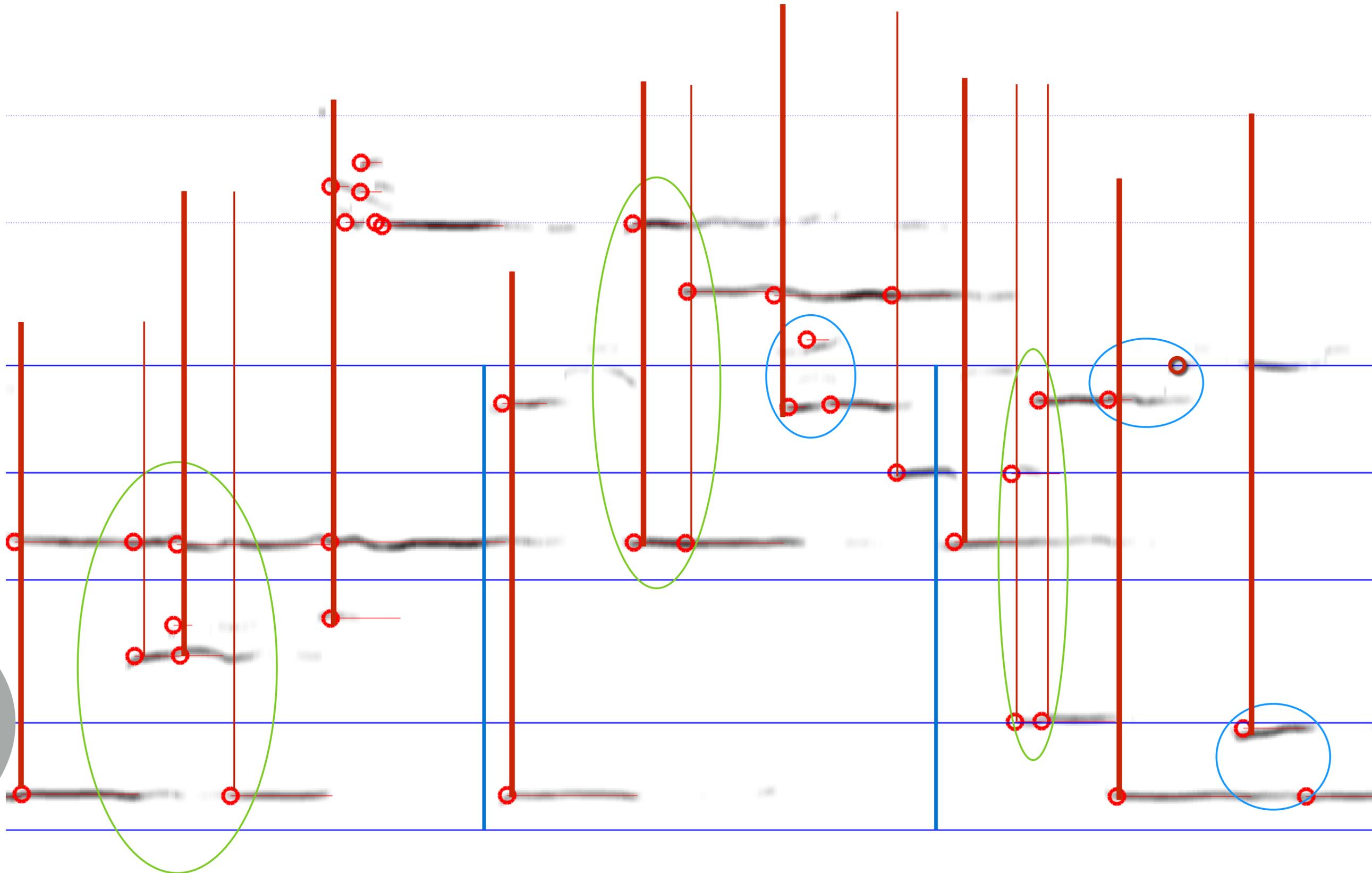
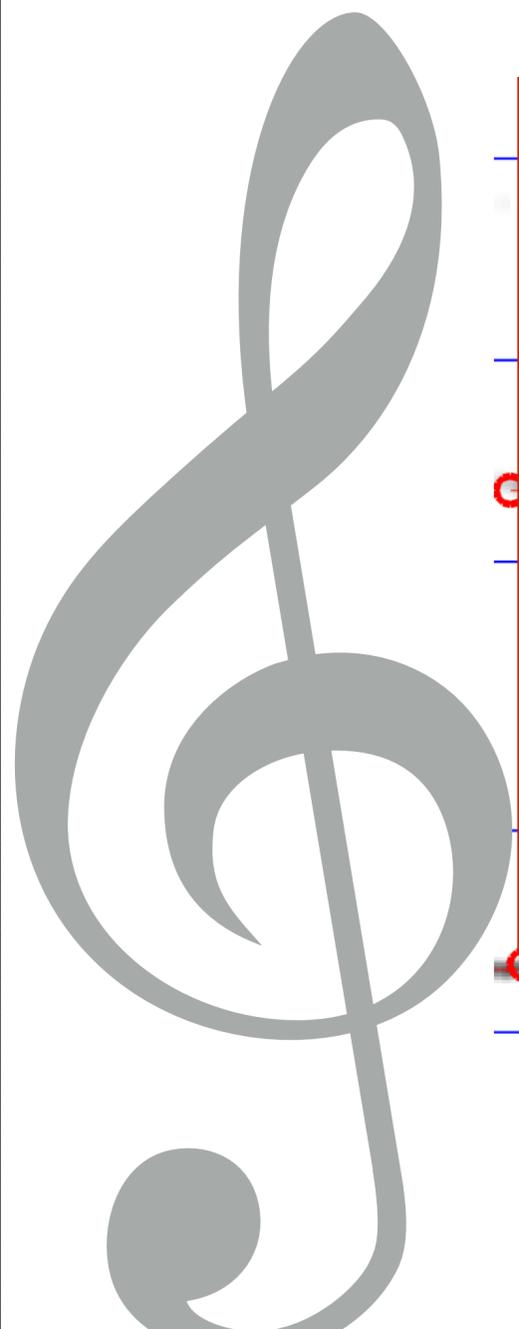
# Previous works



Dixon, 2007

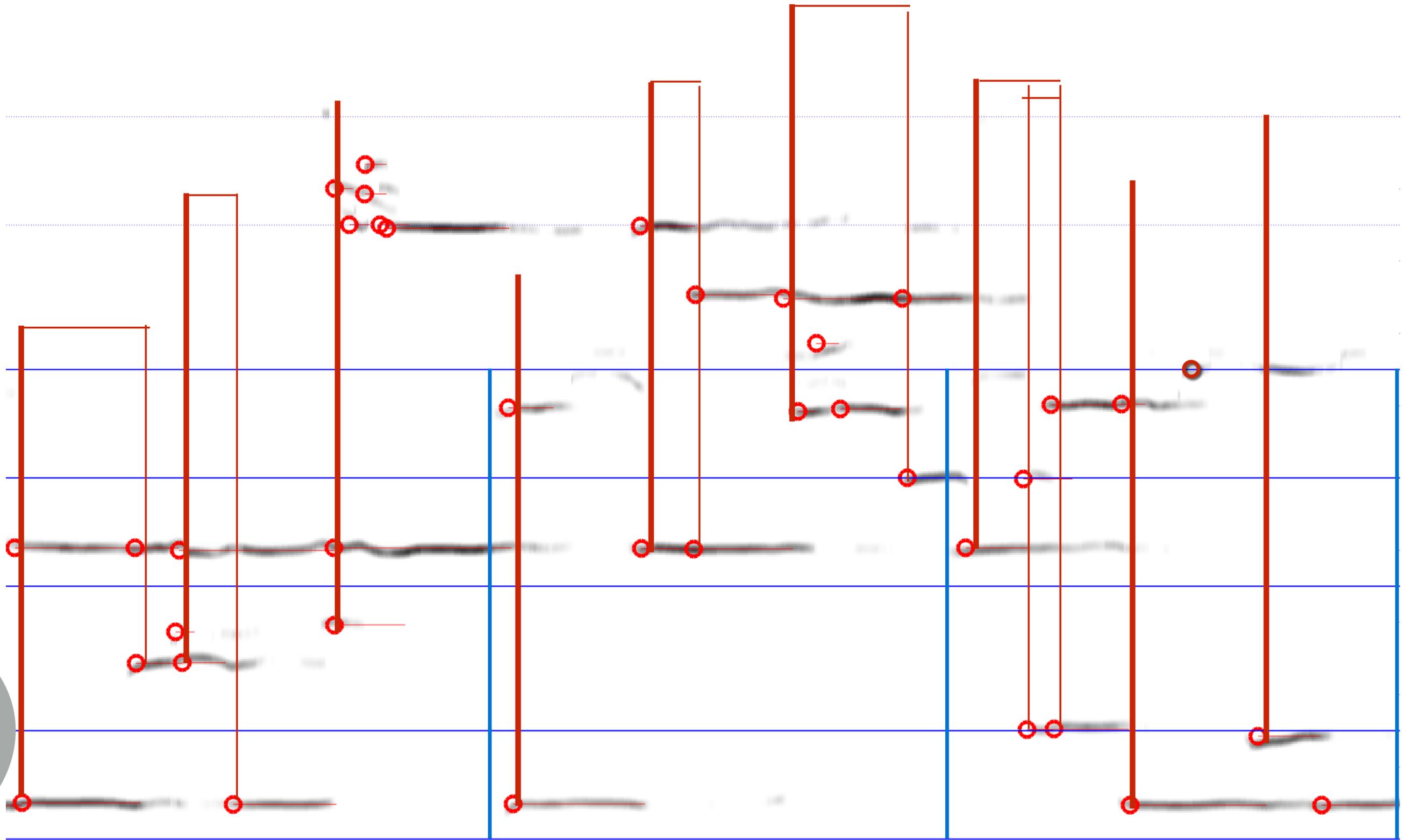
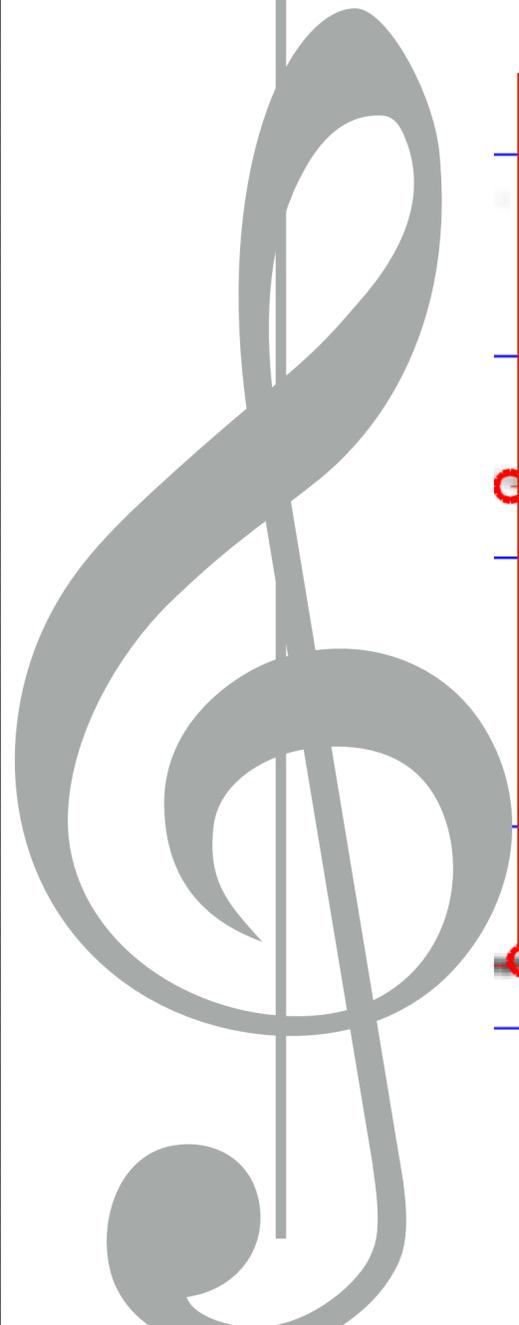


*Vrengja* (springar), played by Olav Luksengård Mjelva  
Available on "Bonfrost" LP by *The Nordic Fiddlers Bloc*

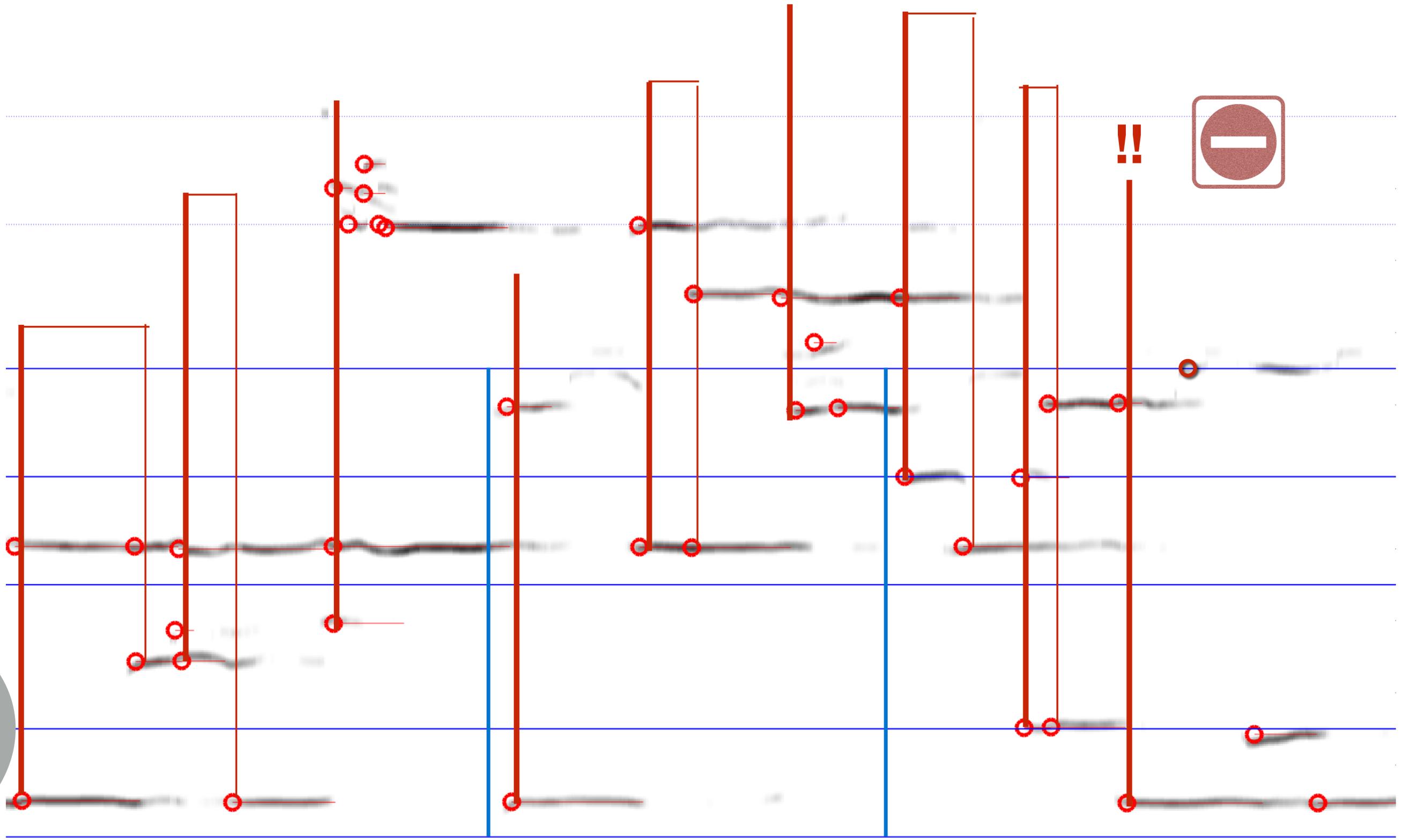
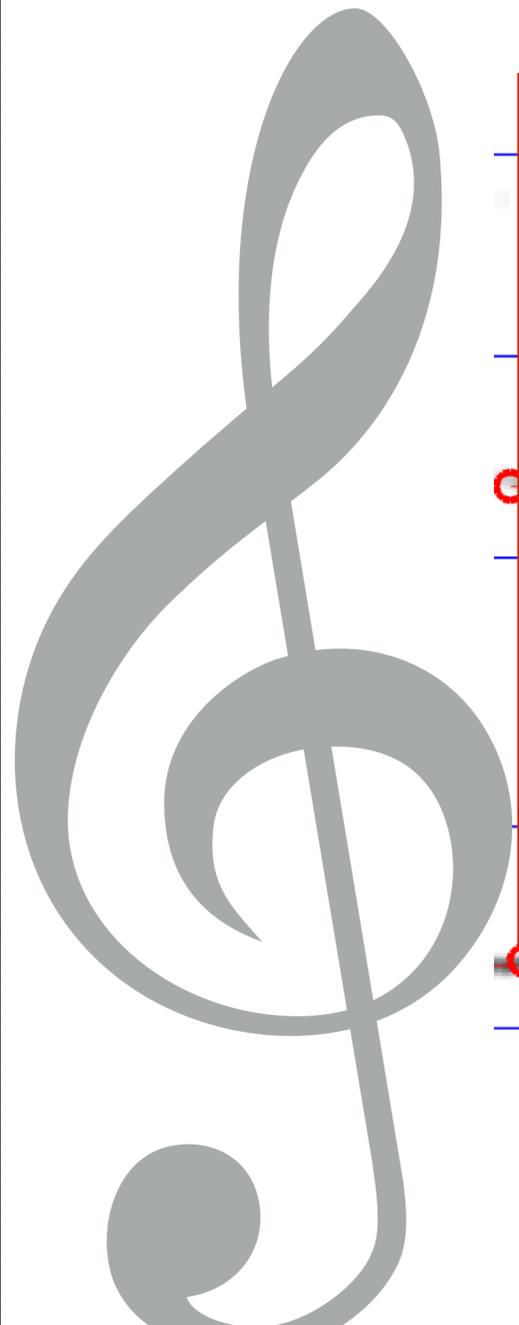


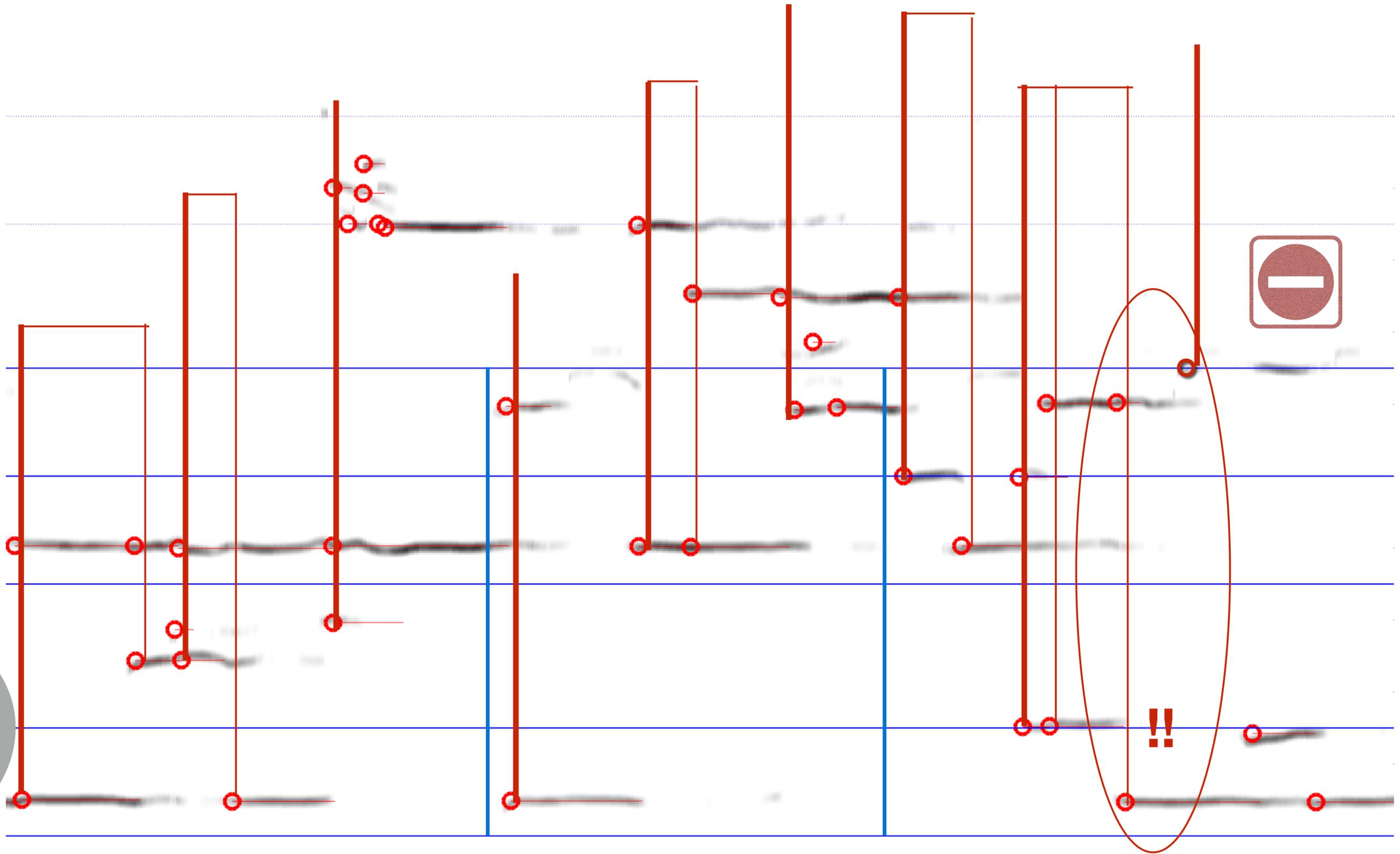
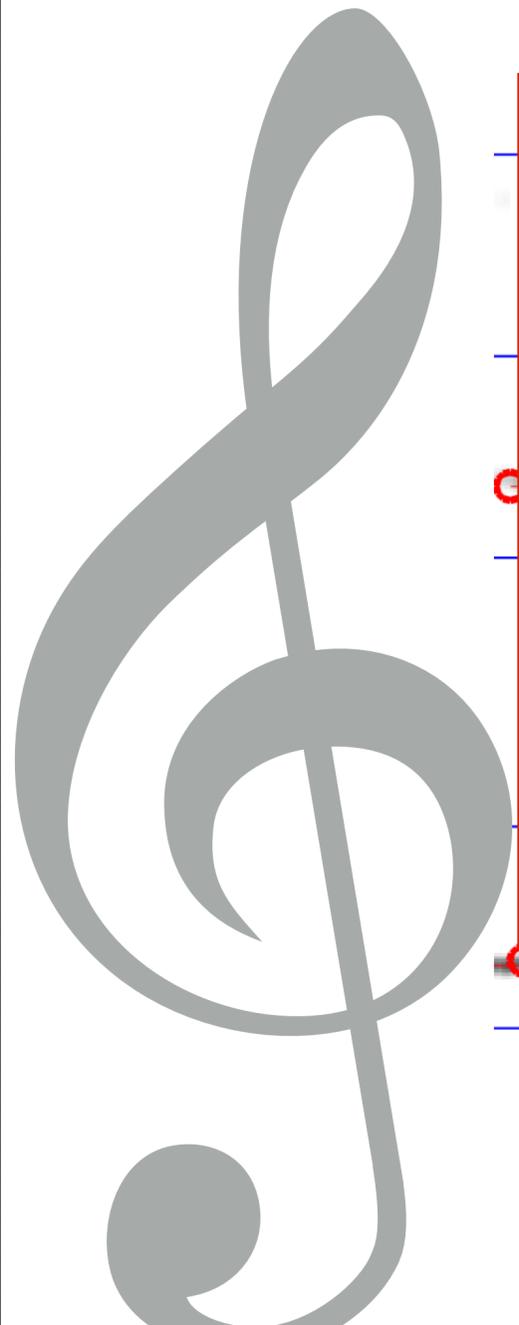
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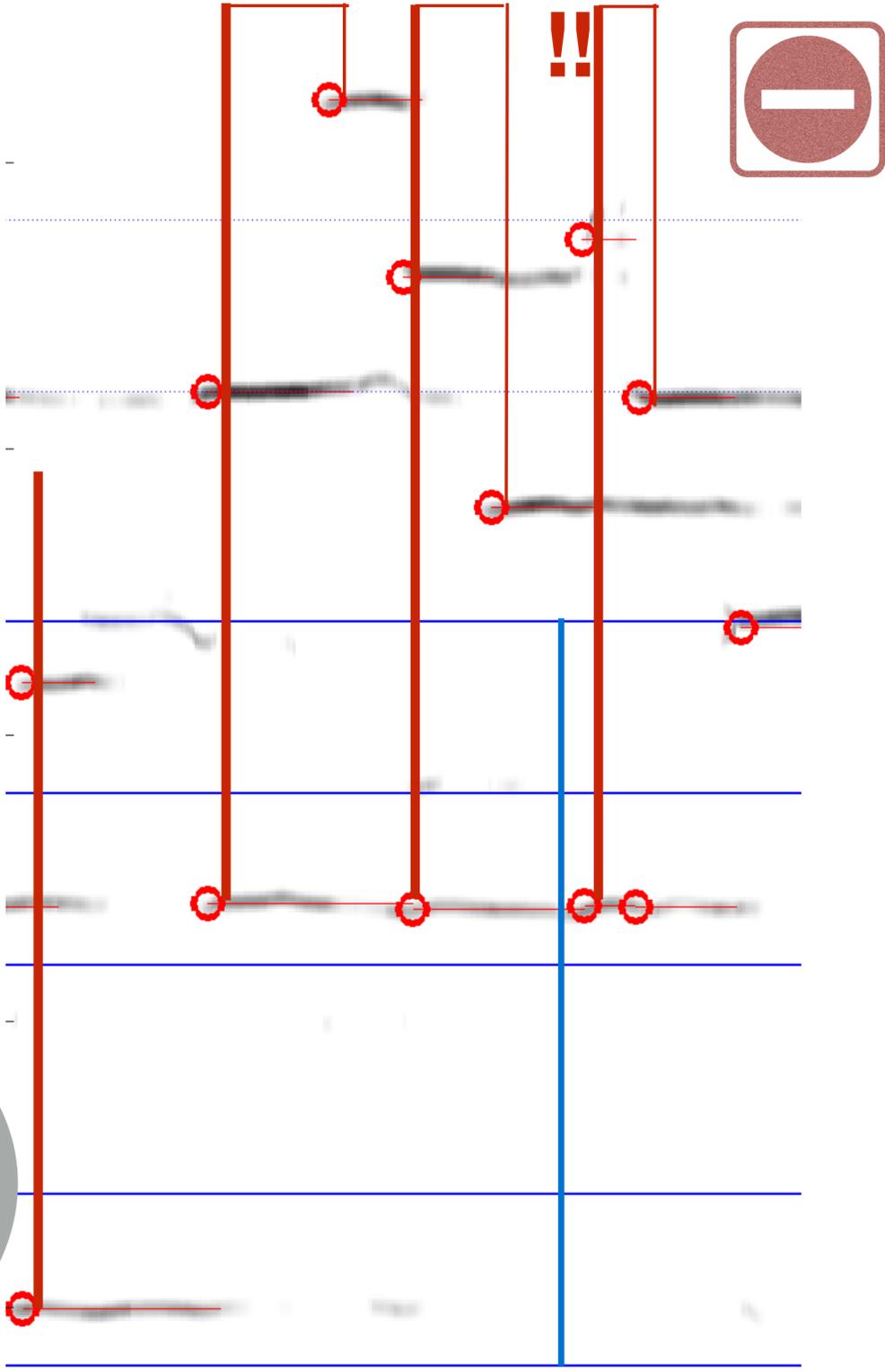
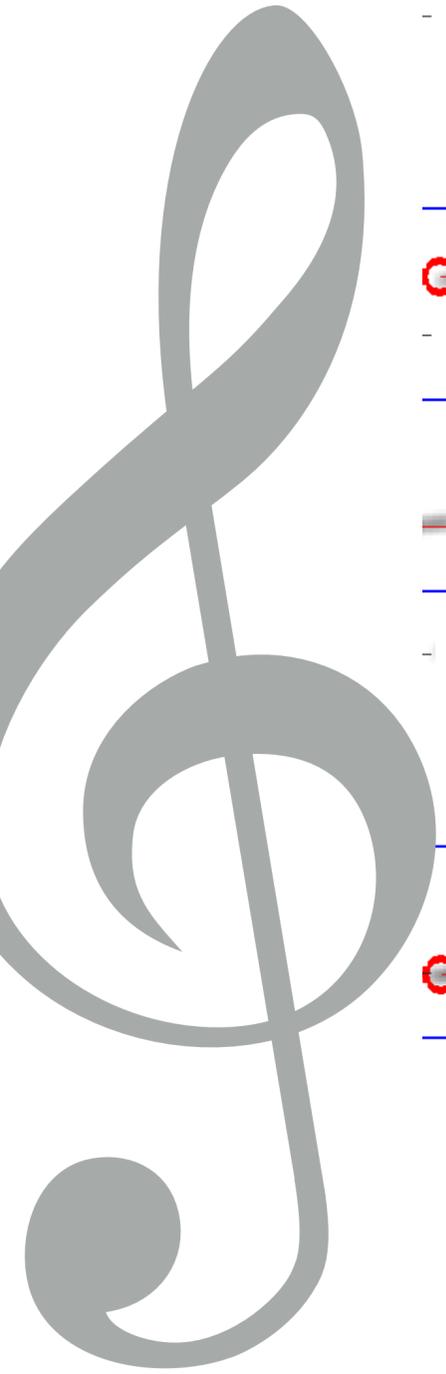
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# Use accent, tying as cues

- ✦ Not available currently
- ✦ What if cue not played by musician, not perceived by listener?
- ✦ Music cognition investigation:
  - ✦ What is the importance of accent, tying in beat detection?
  - ✦ What can be understood about beat without those cues?

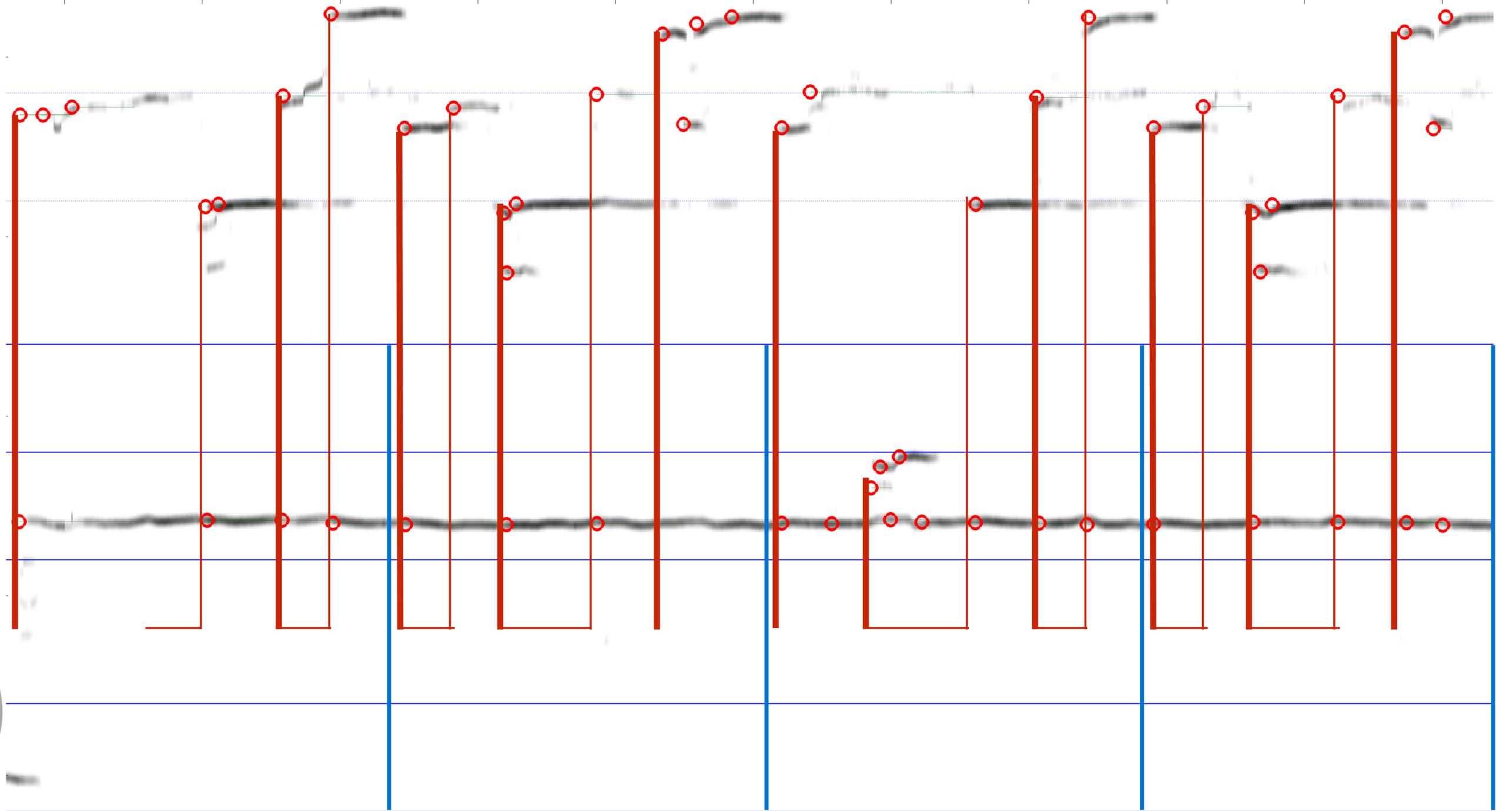








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# Work in progress...

- ✦ Designing the model, establishing rules
- ✦ Small-scale experimentation
- ✦ Testing on progressively larger corpus
- ✦ Generalising to other music genres?