Beyond the Mozart K448 effect?

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DARTMOUTH

Sonata in D and Fugue

For two Pianos

(Köchel, Nos. 448 and 426)

Edited by
Edwin Hughes

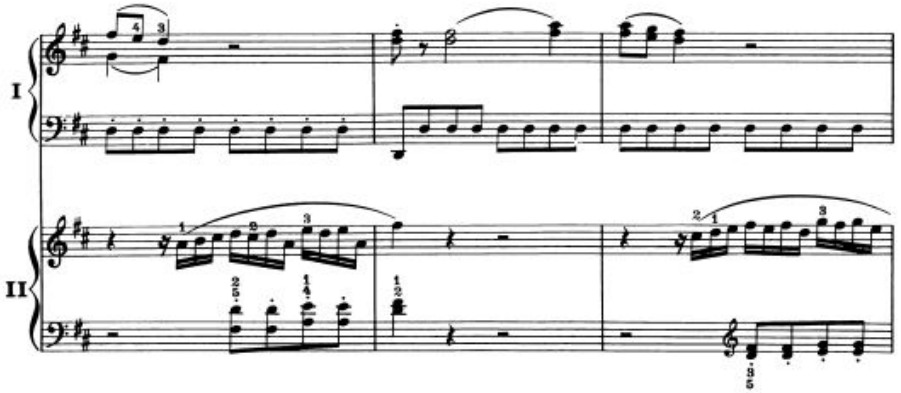
W. A. Mozart
Composed in 1784

Allegro con spirito

Piano I

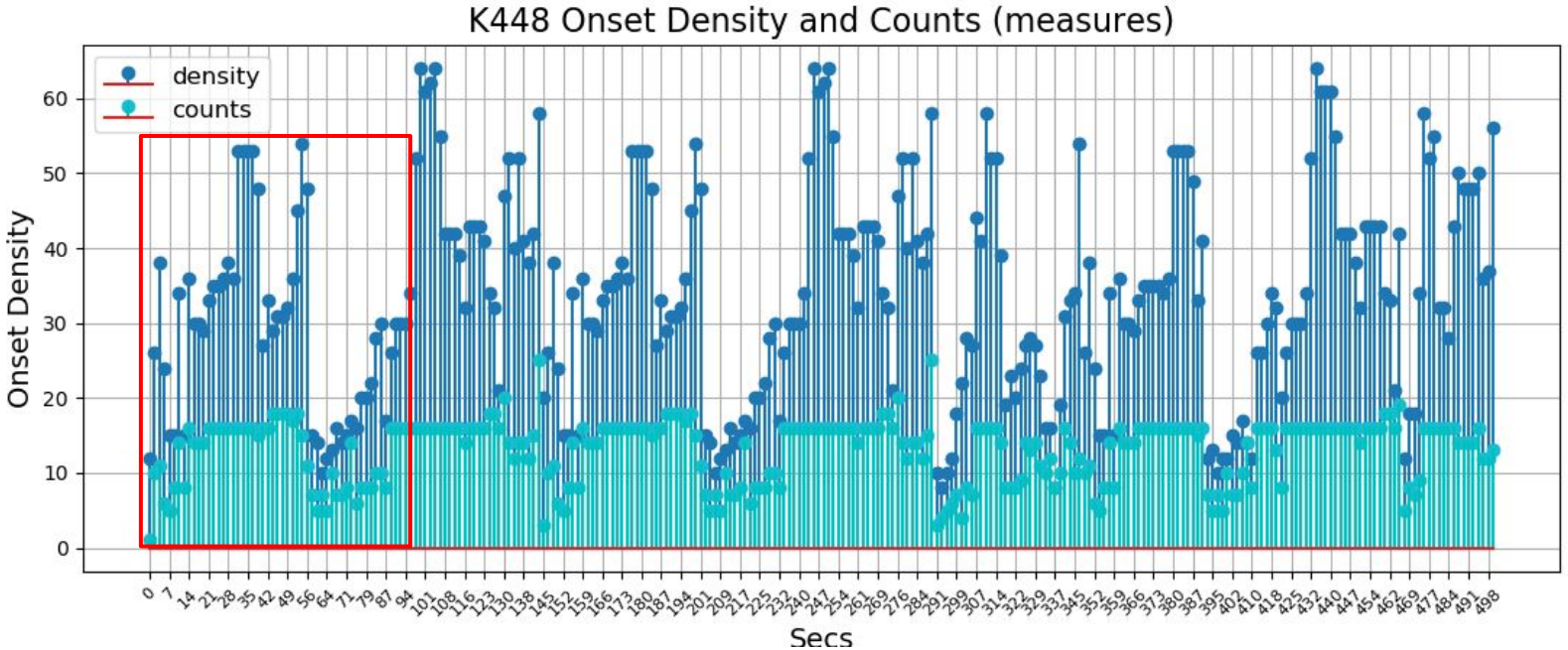
Allegro con spirito

Piano II

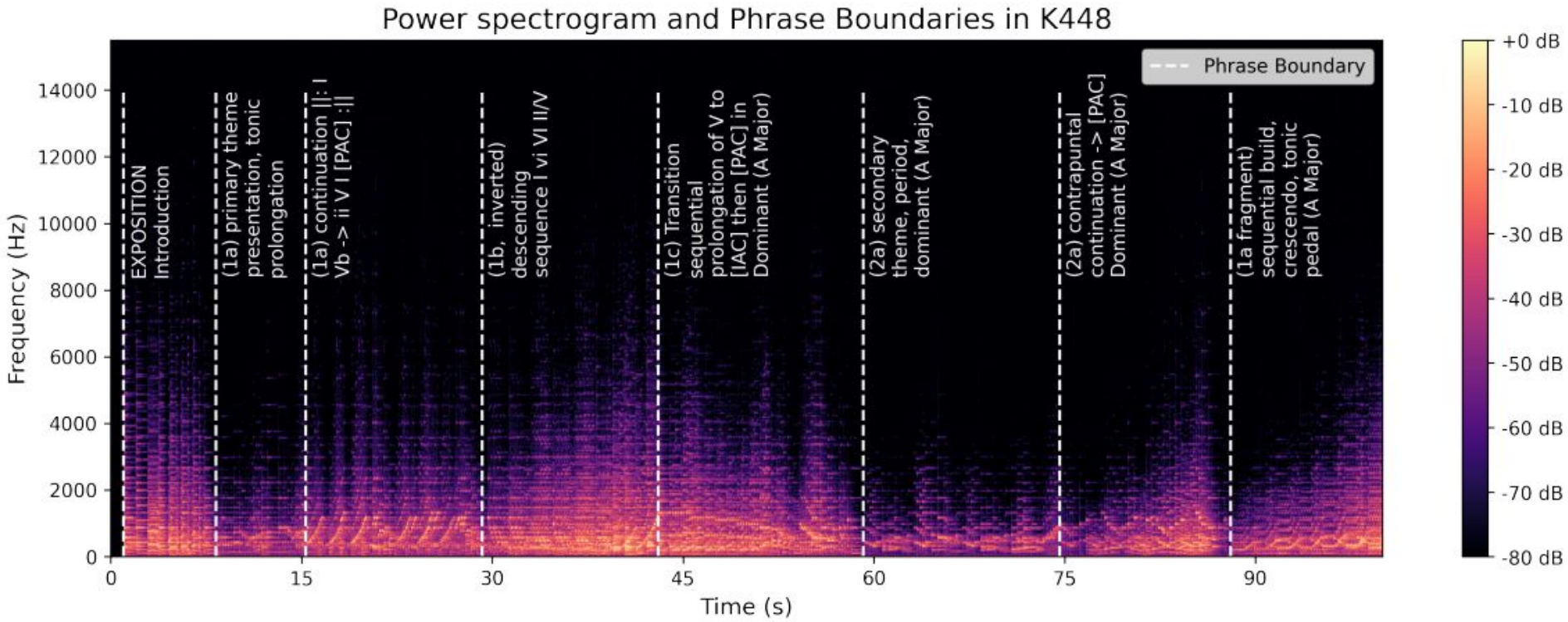


Entrainment
or
Engagement?

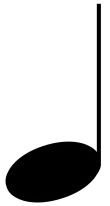
K448 Note Density



K448 Structure

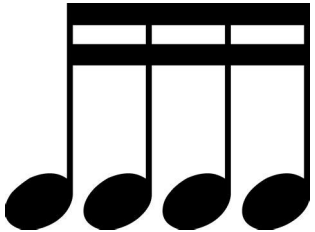


136 BPM

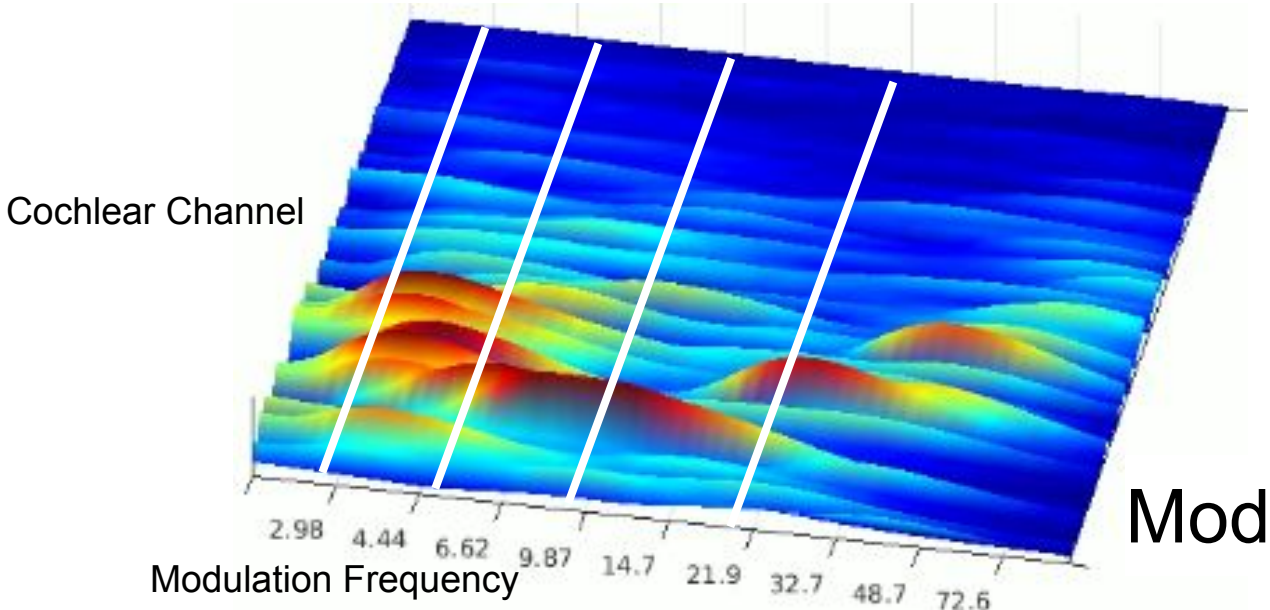


2.266 Hz

4.533 Hz



9.066 Hz



Modulation Spectrum

Feng, Y. et al. (2022) “Evoked Responses to Note Onsets and Phrase Boundaries

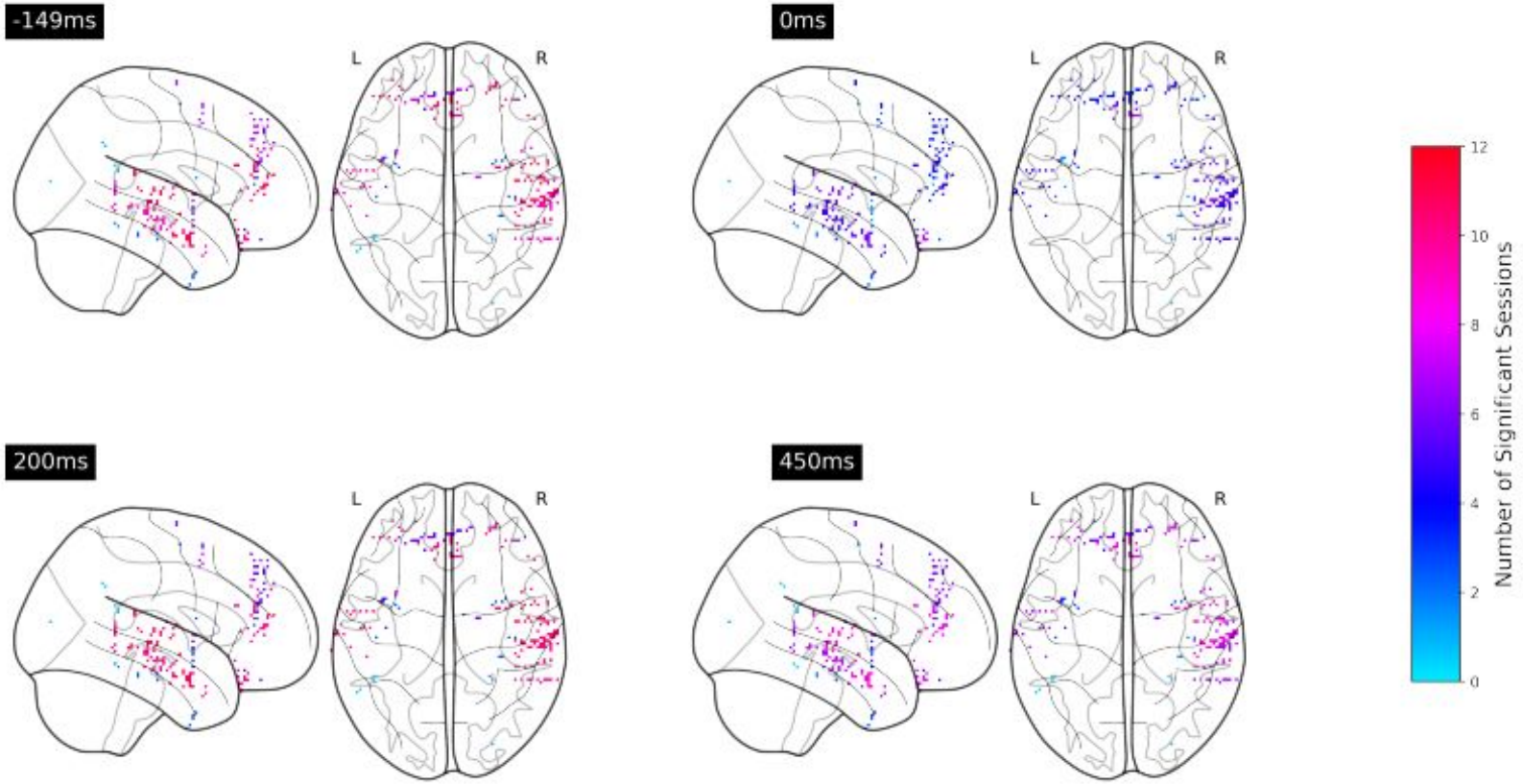


Figure 10. Number of sessions in which neural responses to note onsets and phrase boundaries are significantly different at -149, 0, 200, 450 ms relative to the stimulus markers.

Why Mozart?

- Structure / Sonata Form ?
- Tempo / Beat ?
- Rhythmic Surface ?
- Modulations (Between Harmonics)?

Isolating the factors:

Timbre / modulation spectrum

- Spectral matching
- Mozart with other instruments

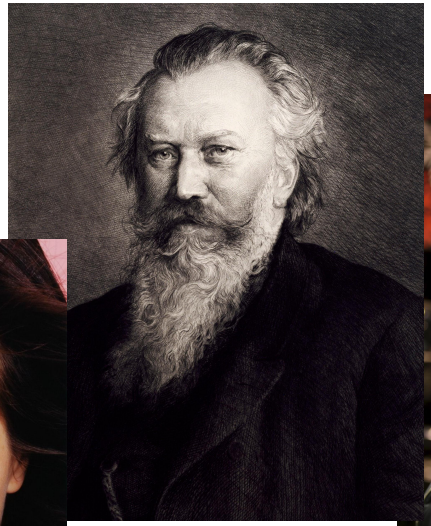
Tempo

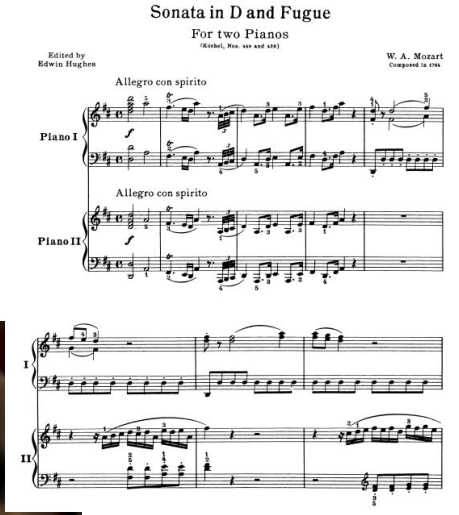
- Coldplay
- Other piano music

Rhythmic surface

- Mozart - rhythm only
- Bach - matching rhythm

Beyond Mozart?





Other tempo-matched classical piano:

http://aum.dartmouth.edu/~mcasey/JSBach_PreludeNo2_Cminor_137bpm.wav

Tempo-matched rock/pop:

http://aum.dartmouth.edu/~mcasey/Coldplay_Clocks_132bpm.wav

Tempo-matched disco:

http://aum.dartmouth.edu/~mcasey/EarthWindFire_BoogieWonderland_135bpm.wav

K448 monotonic (no pitch variation), all notes are D (the tonic) in their nearest octave.

http://aum.dartmouth.edu/~mcasey/K448-136bpm-Monotonic.wav

No rhythm:

http://aum.dartmouth.edu/~mcasey/Wagner_LohengrinWWV75-PreludeToActI.mp3