Data related to "Mild dissonance preferred over consonance in single chord perception"

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Dataverse http://dx.doi.org/xxxxxx

Contents

The stimulus materials and mean ratings for chord and emotion study using 15 chords across two octaves, fully reported in the study under review in i-Perception (under review) by Lahdelma and Eerola (link).

To cite: Lahdelma, I., & Eerola, T. (in press). Mild dissonance preferred over consonance in single chord perception. *i-Perception*.

Emotion ratings and factors

Ratings, background variables and chord factors are available in `chord_data.csv`, which is a comma-separated ascii file. It has the following contents (6 first rows):

ID	Sex	Musicianship	Ollen	valence	chord	register	inversion	tension	energy
S1	female	Musician	992	7	Major	High	Root	1	4
S2	male	Non-musician	100	5	Major	High	Root	3	4
S3	male	Musician	991	6	Major	High	Root	3	4
S4	female	Musician	979	7	Major	High	Root	2	2
S5	female	Non-musician	268	5	Major	High	Root	3	3
S6	male	Musician	622	4	Major	High	Root	1	4

The categories and levels within the variables (MetaPref, Musicianship, Sex, chord,register, inversion) should be self-explanatory or evident in the article.

Stimuli

The stimuli consisted of 15 chords performed with piano timbre across two octaves, making the total sum of chords 30.

The chord material consisted of major and minor triads (played in their root positions and in their 1st and 2nd inversions respectively), tetrachords (major sixth and minor seventh), pentachords (dominant ninth, minor ninth, major ninth, pentatonic, and Neapolitan pentachord), and hexachords (dominant seventh sharp eleventh and diatonic hexachord). Only the triad chords were played with inversions in order to further investigate the results of Lahdelma and Eerola (2016), all other chords were played exclusively in their root positions. All chords were exactly 4.8 seconds in length and played in equal temperament. The chords were generated with *Ableton Live 9* (a commercial music sequencer software), using the *Synthogy Ivory Grand Pianos II* plug-in. The applied sound font was *Steinway D Concert Grand*

with a touch of ambience reverb added to the chord samples to make them sound more natural.

There are 330 audio files in total (30 chords which were played with random transposition of -5 … 0 …+5 semitones based on root). The chords are labelled as

`{number}_{register}_{type}_{no_of_tones}_{name}.wav`

where

- `number` range from 1-330
- `register` is either low and high
- `type` is the chord type
  - "Dom7#11"
  - "Dom9"
  - "Hex."
  - "m7"
  - "m9"
  - "M9"
  - "Major"
  - "Minor"
  - "Neap."
  - "Pent."
  - "Add6"
- `no_of_tones` is the amount of tones in the chord
- `pitch` the pitches used

For instance, `1_high_major_3_G-B-D.wav` is the first chord in the dataset, major triad consisting of G-B-D performed in the high register.

The sound files are provided in a zipped archive (155.5 Mb, titled `chord_stimuli.zip`) that contains uncompressed wave files according to the labelling scheme explained above.

Acoustic measures of the stimuli

Measures of Roughness, Sharpness, and Harmonicity are available in `chord_acoustic_measures.csv`, which is comma-separated ASCII-file. Roughness and Harmonicity were extracted with MIR Toolbox (Lartillot, Toiviainen and Eerola, 2008). One row for each chord in the same scheme as audio files. The columns refer to variables (`Number`, `Names`, `Types`, `No_Tones`, `Register`, `Harmonicity`, `Roughness`, `Sharpness`).

Number	Names	Type	No_Tones	Register	Harmonicity	Roughness	Sharpness
1	G-B-D	major	3	high	0.77856	0.41492	0.86123
2	G#-C-D#	major	3	high	0.76252	0.23262	0.84312
3	A-C#-E	major	3	high	0.75175	0.27138	0.90417
4	A#-D-F	major	3	high	0.76061	0.30703	0.90960
5	B-D#-F#	major	3	high	0.74938	0.15780	0.93201
6	C-E-G	major	3	high	0.72040	0.30545	0.85851

References

Lahdelma, I. & Eerola, T. (2016). Single chords convey distinct emotional qualities to both naïve and expert listeners. *Psychology of Music, 44(1)*, 37-54. Link

Lahdelma, I. & Eerola, T. (in press). Mild dissonance preferred over consonance in single chord perception. *i-Perception*. Link

Lartillot, O., Toiviainen, P., & Eerola, T. (2008). *A matlab toolbox for music information retrieval*. In C. Preisach, H. Burkhardt, L. Schmidt-Thieme, & R. Decker (Eds.), Data analysis, machine learning and applications (pp. 261–268). Berlin, Germany: Springer.