

PROBABILITY OF INCOMING CHORDS AND EXPECTATION FOR CHORDS

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Background

Perception of relations between chords in isolation and in progressions were explained with a connectionist interactive activation model, named MUSACT (Bharucha, 1987). MUSACT represents the end-state of the learning process involved in the perception of chords. There have been various studies which investigated this learning process, by means of exposing artificial neural networks to chord sequences (Bharucha & Olney, 1989; Bharucha & Todd, 1989; Tillman et al., 2000). Yet, these networks were trained only with between-key chord sequences, the order of the chords in a given sequence were semi-random and only the probability of the occurrence of certain chords were predetermined. Hence, the training set was not representative. Furthermore, some psychological and neuropsychological findings have been reported (Horton, 2002; Koelsch et al., 2000; Tekman & Atalay, 2002), which suggest sensitivity to the structure of chord sequences, an information absent in MUSACT.

Aims

In this study I would like to investigate the limits of possessing information about probability of incoming chord(s) in chord progressions for expectation of chords in isolation and in sequences.

Method

To extract the statistical information from chord sequences, a recurrent neural network was trained. Training set was set up in such a way that it included secondary dominants and temporary modulations. In addition, by using different representational schemes for chords, different constraints were put into the architecture of the network.

Results

Research is still continuing

Conclusions

Research is still continuing