

Stability of melodic patterns in oral transmission

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We define melodic stability as the resistance to change of melodic patterns in oral transmission. Oral transmission, in which songs are passed on without the help of notation, relies on human abilities of perceiving and recalling of auditory patterns.

We aim to model how melodies belonging to a 'tune family' (a collection of folksongs that are considered variations of the same tune; (Bayard, 1950)) evolve over time and space, by comparing elements remaining relatively unchanged (stable melodic patterns or 'motifs') to those that vary considerably. The *Dutch Song Database*¹ provides a rich source to study oral transmission, in order to reveal potential cognitive mechanisms that might constrain this transmission, including processes of perception, memorization, and recall (Honing, 2010:122).

The recall of epic poems and song lyrics has been shown to be facilitated by the presence of constraints, such as rhyme, meter and semantic function, which establish conditions for a word to appear in a certain place (Rubin, 1995). The simultaneous presence of several constraints limits the search space for the 'correct' word.

For melodies, we assume a similar process. The presence of rhythmic and melodic constraints limits the range of possible continuations of a melody. Accumulation of such constraints would cause a melodic pattern's relative stability.

Combining insights from an interdisciplinary literature research, we arrive at a number of hypotheses for musical structures providing constraints in oral transmission of folk songs, such as melodic anchoring (Bharucha, 1996), metric and harmonic relationships. Listening expectations resulting from exposure to the repertoire (cf. Huron, 2007) might be considered as the overarching principle in the development of such constraints.

In order to identify stable patterns on which these hypotheses can be tested, we propose a pattern matching approach using suffix trees.

Bayard, S. P. (1950). Prolegomena to a Study of the Principal Melodic Families of British-American Folk Song. *The Journal of American Folklore*, 63(247), 1-44.

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Honing, H. (2010). Lure(d) into listening: The potential of cognition-based music information retrieval.

1 Nederlandse Liederbank, <http://www.liederenbank.nl/>

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