Harmonic factors of melodic stability in oral transmission

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We base our research question on the observation that variants of melodies in oral transmission vary considerably in some parts, whereas other parts remain relatively unchanged. The latter phenomenon we call stability in oral transmission: a melody's resistance to change while being copied, over and over again, over generations and geographical regions. While recent computational methods have the potential to investigate stability experimentally, this phenomenon has received little scholarly attention so far. For the first time, therefore, this study analyzes a large database of folk songs to understand stability in oral transmission . To this end, we use a pattern matching algorithm, which computes how frequently a melodic pattern re-occurs between related melodies, and then use the frequency of a pattern as a measure for its stability, i.e. the higher the frequency the more stable the melodic fragment. We investigate three hypotheses on harmonic factors that might influence stability. The first hypothesis is based upon Krumhansl's work on pitch profiles (1990): we predict that scale degrees which are perceived as conclusive might be easier to remember, and therefore more stable. The second hypothesis investigates Bharucha's concept of melodic anchoring (1996): we predict that successions of tones which fulfill strong harmonic expectations might be more stable. Thirdly, we investigate a statistical model for the expectation of scale degrees (Temperley, 2007): we predict that scale degrees which are frequent in Dutch folk songs will also be more stable. In order to test whether the three theories are related to melodic stability, we analyze 4120 transcriptions of Dutch folk songs computationally, asserting whether melodic patterns predicted to be stable according to one of the three hypotheses indeed re-occur more frequently within variants of related melodies. Observed correlations between the number of pattern matches, and the predicted stability scores, confirm the hypothesis that harmonic factors contribute to the stability of melodic fragments in oral transmission.

References

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