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Summary review of The Rhythmic Interpretation of Monophonic Music by H.C.

Longuet-Higgins and C.S. Lee

In this paper, authors first claim that solely based on the relative durations of the notes, the listener may arrive at a rhythmic interpretation of the note passage. To proof their argument, they consider several criteria that might lead a listener to favor a particular rhythmic interpretation of a given sequence of notes in the rest of their work.

Longuet-Higgins and C.S. Lee first begin to propose a generative theory of musical rhythms according to the work from Lindblom and Sundberg (1972), which they suggest is a sort of perceptual propensities within musicians and is common and musical intuition. They mainly focus on the rhythms of individual bars and their relationships to the underlying meter. They state the relationship between rhythm and the meter is simply as “The former is one of the structures that is generated by grammar associated with the latter”. They generate a tree-structured model by using a set of metrical realization rules and the meter-independent replacement rules, which are context-free. Some “standard” the meter such as 4/4 can be represented by the list [2,2,2...], indicating that top-level unit is divisible into two, and half-bar is also divided into two, and so on, while others such as $\frac{3}{4}$ and $\frac{6}{8}$ can be symbolized as [3,2] and [2,3] respectively. They suggest these syntactic-structured-sentence-like patterns are developed from the intuition of musicians. Although the rhythm is generated by the meter, it is not 100% defined by meter however. Occasionally, meter will lead to rhythmic ambiguity.

To introduce some “natural” interpretation of rhythmic perception, authors first introduce some properties of syncopation. They define different weights for a note or a rest based on their levels. According to their theory, as long as the weight of leading sound note is no greater than the weight of its next rest or tied note, then these two is said to constitute a syncopation. They extend their discussion on syncopation from individual bar to regular passages, and they get such a general characteristic of “natural” interpretation: the listener will interpret the sequence of note in the way when it can be interpreted as the realization of an un-syncopated passage. Then they define a parsing algorithm for note sequences which delivers an interpretation of the sequence as the realization of a regular passage.

Based on the discussion above, Higgins and Lee begin to think about how higher-level rhythms might be perceived by the listener on the basis of the durations of the notes. They find higher-level rhythms cannot be inferred from the regularity assumptions, but listener may still perceive such high-level groupings.

From this paper, Higgins and Lee show us the important criteria of relative duration of the notes in the rhythmic interpretation process, and develop a parsing algorithm based on that. They also introduce the concept of syncopation, and its importance inside the interpretation theory.