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Paper review - *A Model of Metric Coherence* by Anja Fleischer

Fleischer's paper presents the application of RUBATO, a model for analyzing the metric structure of a piece of music without regard to time signature or bar lines. The author makes use of a very interesting distinction between types of meter: inner and outer. The inner metric structure is implicated by the actual notes in a piece, regardless of time signature or bar lines. The outer metric structure is delineated by the externally imposed time signature.

The goal of the study was to find similarities between inner and outer metric structures of pieces of (classical) music. When this is achieved, a degree of "metric coherence" can be articulated.

I thought the paper contained useful information, however Fleischer does not give enough credence to a briefly mentioned explanation of time signature and bar lines: that they are simply orientation tools for the performer. I find that this is true in many instances. Performers may simply want a reference point for rehearsal coordination, and a visually easy way to divide up the page and the notes. Fleischer presents this as an alternate explanation to the contention that bar lines and time signatures define the accent patterns in music. However, this alternate explanation is ignored in favor of developing and testing the model at hand.

The model is based on MetroRubette, a model that detects pulses. Onset times of notes that match up with the pulse are said to form the "inner local meter." The model finds all the inner local meters, and labels these using set numbers (e.g.,  $a = \{0,2,4,6\}$ ). The length of a local meter determines its weight. The sum of the local weights is then taken, and deemed the inner metric weight. The outer metric weight is calculated according to how many layers to which an onset belongs.

The Schubert Moment Musical example was particularly interesting, as the visual pattern that occurs with the metric weight is quite evenly and symmetrically sloped. I wonder if this is a direct correlation to the intentions of the composers, as he chose different rhythmic motives throughout the piece. Of course, this leads to a much larger theoretical/philosophical discussion regarding composers' intentions and the "expression" of a piece of music versus actual listener perception.

I found the assumption that the model should avoid discrepancy between inner and outer meter too simplistic and not warranted in many cases. For one thing, performers are neither surprised nor insulted to find an accent on the second beat of a measure instead of the first. Also, this very discrepancy can make music more interesting to ponder.

While dealing only within the realm of Western classical music is always a limitation, Fleischer's choice of works was highly appropriate. It is true that Renaissance madrigals can be dance influenced, and therefore have a regular accent structure that can be expressed by meter. It is also widely

known by musicians that Brahms incorporated ambiguous or overlapping metric structures in his works.

One example I would have liked to see in the analysis is *Revey venir du printans*, a 16th century chanson by Claude Le Jeune. This is an interesting case because, while composers of the time did not specifically write in bar lines or accent marks, there is a very deliberate metrical accent structure implied in the piece. French composers of the Académie de Poésie et de Musique would set poetic text in such a way as to place artificial “accents” on longer notes. The justification was that the French language lacked any natural speech accents. This piece is also based on a dance pattern that defies a clean 4/4 or 3/4 time signature, as seems to be the assumption of dance music in Fleischer’s study. Any imposed bar lines would have to be unevenly spaced in order to capture the inner meter of the tune.