
Using the 48 fugue subjects of the Well-Tempered Clavier by Bach, Longuet-Higgins and Steedman try to recreate human cognition of music by breaking down the interpretation process into two separate sections: The metrical program, which is less sophisticated and leaves a great deal of room for further work, and the harmonic program, which has to decide as early as possible on the key and thereafter to place each note in its correct relation to the keynote.

The metrical algorithm consists of the following rules that were obtained through trial and error as well as through personal musical knowledge: 1) “whatever its length, the first note of a subject (or the first two notes, if the second is shorter than the first and third) may always be taken to define a metrical unit at some level in the hierarchy, though usually at rather a low level”; 2) “Once a metrical unit has been adopted it is never abandoned in favour of a shorter one, or another one which cuts across it.”

So, the authors listed certain conditions under which a new metre can be inferred from the lengths of the incoming notes and rests. The authors admit that the program avoids mistakes, at the cost of a rather incomplete analysis, but seemed just as impressed with the program’s mistakes as much as its correctness.

The harmonic algorithm consists specific major and minor shapes that can “cut out” the correct key (or keys) from a two dimensional array where each note is a perfect fifth below the note on its right and a major third below the note written above it. Exceptions to this key-cutter concept are when the tonic-dominant preference rule is required and when the algorithm needs to resort to the city-block distance rule for placing the note in the closest possible harmonic relation to the previous notes of the subject.

For the first time, in all the different articles that we have been reading, do I feel encouraged by a particular harmonic algorithm such as Longuet-Higgins and Steedman’s. I have to agree with Temperley in which last weeks article he stated that though Longuet-Higgins and Steedman’s Algorithm had better results, their algorithm was far from perfect and could be improved in many ways. It is not a perfect algorithm. It seems to do well in a test consisting of Bach’s 48 fugues from the Well-Tempered Clavier because it was made from the fugues and the algorithms rules based off of the fugues notes and relations. But, on the other hand, the simplicity of their structure, seems encouraging enough for future research to be done.