Chris Dobrian: Algorithmic Generation of Temporal Forms
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This paper's thesis is on the abstraction of departure and return for musical structure. When musical structure is considered in terms of stasis and transition, this form of ornamentation (where stasis is ornamented by transition, followed by a return to stasis, and transition is ornamented by a period of stasis between its endpoints) can produce an infinite variety of forms.

This process of ornamentation can be applied recursively: imagine some particular pitch A. We might consider a single pitch an example of stasis (one might consider other aspects of a note, however, or a collection of notes as a hierarchical structure. The point of the paper is that the abstraction holds for each level of abstraction.) and ornament it with ABA – the pitch, a transition to some other pitch, and a return to the original pitch. Each of these components of the ornamented piece are themselves candidates for ornamentation: ABA can become ACBCA can become ADCDBCA, for instance.

This successive regression might cause a number of practical problems; making a section of music too "busy", for instance, and exhausting the listener's attention such that the original structure exceeds the bounds of working memory and can no longer be perceived. This issue can be addressed by introducing limitations in the segments (the x-axis, to use the nomenclature of the paper's example): stretches of musical structure that do not meet some minimal length requirement will not be ornamented. This, in effect, puts a ceiling on the complexity of the ornaments introduced in the piece; by carefully altering this parameter different sorts of music can be produced.

This process is exactly analogous to fractal terrain generation, which can be imagined in the two dimensional case this way: take a line, pick some point on the line, and perturb its height by some arbitrary degree. Consider this perturbed point as a new endpoint, which splits the original line into two sublines. Now apply the process recursively to the two sublines, grounding the recursion when the line segments become short enough. This process, extended into three dimensions, becomes the exact technique used for years to generate artificial landscapes.

The power of the departure and return ornamentation is that it is applicable at any level of structure. One can use it directly, as with the pitch example described above, or to guide more general characteristics of a piece. One can also apply it to various components of a piece. The author gives an example of this by breaking the composition into eight musical dimensions, and associating a function (the output of the ornamentation algorithm) with each of these dimensions. The function's output is used stochastically to govern the shape of the musical feature.

Each of these features can be given some particular characteristic, by tweaking the parameters of the ornamentation function. The result is a generator that produces a family of structures. The author then describes a higher-order composition performed by assembling these chunks based on their conformance to a fitness function, although I'm not entirely clear what he's talking about at this point.