Dynamically Visualizing the Mixed Choir Midis on a Digital Display via Directly Spatial Decompositions

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ABSTRACT

The digitalized common mixed choir, often abbreviated as SATB, is decomposed into four dynamical parts, and directly mapped, not inversely converted, to four objects or sections, respectively, on a digital display. The mapping program separates the common mixed choir to several tracks with similar physical conditions in the intuitive way. The corresponding digital display plays these tracks animatingly on various regions, and successfully transforms the sound effects into the visualisation effects. These visualised sounds also promise a directly mapping back scheme to a mixed choir performance.

1. INTRODUCTION

We use the word *harmony* today to refer not just to the vertical dimension of music, but also a general sense of agreement or peace—the original meaning of *harmonia* to the ancient Greeks (Franklin 2002).troduction.

2. FUNCTIONAL DECOMPOSITION

First of all, the morphing problem should be addressed. Osaka proposed that sound morphing should be evaluated in three aspects[1]:

1. Continuity
2. Intermediateness
3. Homogeneity

In continuity, given two different sounds, timbre is continuously controllable. Timbre interpolation is another expression for this feature. Distinct approaches to the correspondences between sound and light are at least as important as differences in technique in distinguishing the work of artists in this tradition. Many artists, from the 18th-century inventor of a “color harpsichord,”

$$\theta_M = f(\alpha) = f(\tan^{-1}(W / H_T))$$

Louis-Bertrand Castel, to modern creators of music visualizer software, have attempted to directly illustrate music, mapping pitch to spatial height or color hue. Usually,

3. DYNAMICALLY VISUALISATION

Some other methods besides adding extra information to the source are considered in this section. We take two homogeneous sounds, two sounds having harmonic structure as an example.

As the simplest example, a sound of harmonic structure is taken. However, this structure gives octave relation, and it is not always musically interesting. This is shown in Fig. 1.

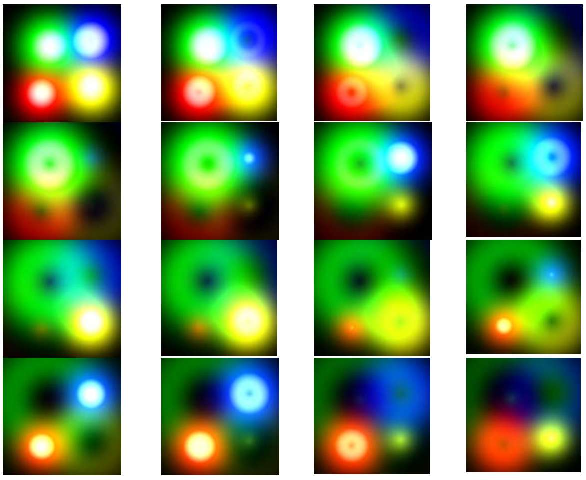

Figure 1. Representing four tracks harmonics, i.e. SATB, in four sections (up-right, up-left, bottom-left, and bottom-right) and four colors, i.e. RGBY.

Cross synthesis, a technology that hybridizes two sounds, was applied to music pieces from the early days. Of particular note, a synthesized sound adding the phonemes of a speech to noise is introduced in Joji Yuasa’s piece in the late 80s[p1].

4. CONCLUSIONS

The digitalized common mixed choir, often abbreviated as SATB, is decomposed into four dynamical parts, and directly mapped, not inversely converted, to four objects or sections, respectively, on a digital display. The mapping program separates the common mixed choir to several tracks with similar physical conditions in the intuitive way. The corresponding digital display plays these tracks animatingly on various regions, and successfully transforms the sound effects into the visualisation effects. These visualised sounds also promise a directly mapping back scheme to a mixed choir performances.

5. REFERENCES

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