ANIMATED SCORES FOR ELECTRO-ACOUSTIC TAPE/LIVE PERFORMER COMPOSITIONS

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ABSTRACT:
This project provides a solution to synchronization difficulties endemic to the genre of tape and instrumental compositions.

INTRODUCTION:
Electroacoustic music which exploits the medium’s unique qualities—e.g. diminishment of rhythm and tempered pitch as primary structural elements—provokes unique challenges for instrumentalists playing alongside a tape part. Coordination of instrumentalist(s) with a tape according to a composer’s wishes has historically been a challenge for many reasons.

1. LIMITATIONS OF TRADITIONAL SCORE NOTATION:
Lack of a standardized notation system for electroacoustic sounds, and development in this genre of elements not present in instrumental music, are factors which make consistent score following difficult. The score that an electroacoustic music composer creates is a highly subjective interpretation of his/her music. Furthermore, the score is a translation of sound into another medium—visual art.

Musical elements most audible to a performer are frequently not the ones a composer has chosen to depict. Conversely, elements most salient to the composer may not be clearly audible to the performer. Often, because of unusual spectral weightings, particular pitches (if present) are virtually impossible to pin down—on some hearings, over some speakers, a passage may suggest frequency A, and on other hearings, frequency B.

2. CONCERNS OF COMPOSERS:
Unless laxity in the coordination of tape and performer is intentional, unpredictable variations from performance to performance can include disastrous musical results. The tighter and more intricate the intended coordination between performer and tape (as in chamber music), the more significant is a performer’s loss of place.

Score following assistance for performers also serves to alleviate anxiety and stiffness which result from the complexities already described. The allusion of interactivity between tape and performer depends upon a performer’s spontaneity and musical concentration. These qualities are difficult to sustain if one is struggling to identify the sound/score correlation at every moment.

3. LIMITATIONS OF TRADITIONAL SOLUTIONS:
The click track has been one traditional solution to the problems described above, but this approach has significant drawbacks. Wearing headphones is a distraction to the audience and performer(s). Hearing sounds with the music which are not part of the music interferes (to understate the problem) with a performer’s immersion in the music itself. This situation is exacerbated when a click track is overlaid on absolutely arhythmic music. Ironically, it is this latter category of electroacoustic music which is the most challenging to play alongside, and which most needs something like a click track.

Use of a stopwatch is another solution which has been used. This method, too, is imperfect as it demands intense concentration by the performer on something other than the music. In addition, a stopwatch is difficult to read from a distance. While time cues in a score can be of enormous help during rehearsals, these cues are ultimately of lesser value in a performance situation.
4. ADVANTAGES OF AN ANIMATED SCORE:
An animated score (combined on CD-ROM with an audio track) allows a performer to follow a tape part with extreme precision and with little effort.

5. EXECUTION OF CONCEPT:
The quantity of music depicted moment to moment on the screen may be tailored to the particulars of the composition. Whether the visual cues change every second, every tenth of a second, or with varying frequency, may be determined by the requirements of the composition as well.

The nature of the cues may also be responsive to the individual composition. A window-like box, for example, allows a time window of necessary coordination. A note-by-note score illumination dictates coordination through time with the tape more emphatically.

6. TECHNICAL DETAILS/SUMMARY:
Software used for this project includes Adobe AfterEffects and Premiere. The original scores were created with Notewriter and Finale software. These files were saved as encapsulated postscript files, converted to pdf, and opened in various graphics software applications.

The resulting projects were completed through frame-by-frame animation. A long-term project goal is the creation of software to allow a more automated process of score creation.

The ICMC98 Poster Demonstration examples are the following:
Example 1: E Over Mc Squared, Elizabeth Hoffman, for soprano and tape
Example 2: Life Study #1, Richard Karpen, for clarinet and tape