Reconstructing Music from Sampled Audio

“Concrete music”, a movement within electronic music that originated in 1940s France, is distinguished by its use of recorded sound, either alone or in conjunction with completely electronically synthesized sound. These recorded sounds include musical instruments, the human voice, and natural sounds, but they are often used compositionally in a way that obscures their source and renders them unrecognizable in context. This play between familiarity and unrecognizability creates a musical tension that I find very interesting and wish to explore further. However, where concrete music often rejects the traditional musical rules of melody, harmony, rhythm, etc, I intend to use recorded sound in much more musical compositions, including reconstruction of pre-existing songs. To give an example, this might take the form of the cantina song from Star Wars played using audio from an opera singer’s voice. The ultimate goal is to create music using “instruments” that do not exist in the real world, but which have a sound complexity that cannot be achieved by purely synthesized sound.

The bulk of the project will involve sound sampling and modification to build the electronic instruments. Various sampling techniques will be developed manually using tools such as Adobe Audition’s spectral frequency editor, and then transferred to an automatic implementation in Supercollider. I will produce a set of sound analysis tools to identify beats, pitches, and timbres, and clip the relevant audio segments into samples for later use. Another section of the program will be devoted to reading in XML-formatted score files and playing the songs using the sampled audio. Once developed, these tools will be used for a series of compositions, with artistic creativity directing the choice of audio sources and instrumentation.
Deliverables

1. Code for automatically sampling and modifying audio
2. Code for reading and playing XML files, designed specifically for use with sampled instruments
3. Music files for finished pieces