Notes on SYNTAL(V.00.2) for OSX
Chapter 1: Getting Started

Wayne Slawson
Department of Music
University of California, Davis
Davis, CA 95616
or
Yank Gulch Music
8555 Yank Gulch Road
Talent, OR 97540

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What SYNTAL Is and Does

SYNTAL is a set of computer programs that help composers to specify and generate music that consists of speech-like computer-synthesized sounds.

There are essentially two parts to SYNTAL. The first part is the program that calculates the sounds. The second part is the program that tells the first program what kind of sounds to calculate.

The first program is what is called an *orchestra* in the Csound computer-music language. The *instruments* in this orchestra are also of two kinds. There is a large instrument—called the synthesizer—that does the actual calculations of the sounds, and a group of many very small instruments that generate control signals for the synthesizer. The orchestra is an adaptation for music of one of the best-known and admired speech synthesizers designed by the late Dennis Klatt of the Research Laboratories for Electronics and MIT. The name of that synthesizer is KLSYN88 and it is documented quite completely in D. H. Klatt and L. C. Klatt. *J. Acoust. Soc. Am.* **87**, 820–857 (1990).

The second program's function is to generate a Csound score from specifications of *events*—roughly the equivalent of notes in music for people to perform—by the composer. Typically an event is specified by a single, rather short line of typing. The event specifications are organized into a text file

by the composer with the successive events in the file corresponding to the temporal order of the events in the segment of music being specified. This file of events—which is actually a C-language program, although it doesn't look very much like one—is called a SYNTAL *source* file. Source files are compiled and the resulting programs are executed to produce Csound *score* files. Score files in Csound turn on the instruments in the Csound orchestra and control their actions. The scores that come out of the SYNTAL process are long text files consisting mostly of numbers; they are not very readable and need not be read unless someone wishes to make their own version of SYNTAL and needs to debug their work.

Running SYNTAL

(The following instructions are tailored for use on a Maxintosh computer running the OSX 10.3 operating system. They should work fine for earlier versions of OSX, but they have been tested only on OSX 10.3)

Let us assume that someone has set up SYNTAL to work on your computer.

[If SYNTAL has not been installed on your computer, you need to contact the author (at the Oregon address) to get a CD containing the SYNTAL files. Installation instructions are in the file README on that CD.]

Let us further assume that you have composed something that you would like to specify, synthesize, and listen to. Your main tasks are to write a SYNTAL source file, to run it, and to play it.

It is best to start by copying a working SYNTAL source file into your working directory and then modifying it using a text editor program.

Let's assume that you've copied a SYNTAL source file to your directory; have modified it, using say TextEdit or some other editor available on your computer, so that it specifies the events in your composition; and have renamed your source file to be called 'zippo.c'. (NOTE: all SYNTAL source files have to have the '.c' extension after their file names.)

Then you carry out the following steps. (NOTE: What the computer types is in ordinary type; what you type is in **boldface**):

Open a Terminal window: Applications—Utilities—Terminal (which means in a Finder window go to Applications, then Utilities, and then double click on Terminal). When the window opens you will see a *prompt* that will look something like:

```
basho25%
```

Here the "basho" is the name of the computer, the "25" is the number of

the command you're going to execute. By implication, you've executed 24 commands since opening the window, and the "%" just acts as punctuation.

After the prompt type:

```
basho25% csp zippo
```

Notice that you must leave out the '.c'. The 'csp' program runs 'zippo.c', generating a score file and setting the orchestra to work on it. A lot of numbers will be printed out while this calculation takes place. On modern Macintosh computers it takes somewhat less time to calculate the sound than the duration of the sound itself, but this depends to a significant degree on the kinds of specifications you have made in the 'zippo.c' file.. When the calculation is done, launch Quicktime. Under File, click "Open Movie in New Player", select 'zippo.aiff', and use the controls in the Player window to listen to your sound.

That's all there is to it.

See Chapter 2 for descriptions of some of the various kinds of events—called *event types*—that SYNTAL provides for you.

Some Handy UNIX commands

The following commands are to be used when you are in the winterm window.

1. What directory am I in?

   ```
   basho27% pwd
   ```

   This stands for "print working directory".

2. What files are in this directory?

   ```
   basho28% ls
   ```

3. Change to directory 'foo'.

   ```
   basho29% cd foo
   ```

4. Change to your home directory.

   ```
   basho30% cd
   ```

5. Make a new directory called "Project1" in your working directory.

   ```
   basho32% mkdir Project1
   ```