

**Figure 5.2:** OpenMusic notation editor displaying a chord sequence.

Figure 5.3 shows an OM patch that reads SPEAR data, transforms the data, displays the transformed data in common practice notation, and writes out the transformed data to a new text file. The patch functions as follows: The `spear-read` object (located at the top) takes the name of a text file as input and outputs an `spdata` object which is stored as an embedded object (this avoids having to re-read the data from disk on subsequent evaluations). The `spdata` output is split into three streams: the frequencies, the amplitudes, and the partial index numbers. Each stream is a LISP list of two elements. The first element is a list of times for each frame and the second element is a list of lists where each sublist is the frame data (either frequencies, amplitudes, or indices). The time base is stretched (the “dilation” parameter) and the frequencies distorted in the `dist-frq` sub-patch. The data is reassembled into frames and converted to a chord sequence in the `visu-chseq` sub-patch. The times, indices, frequencies, and amplitudes are also routed to the `spear-write` object which outputs a new text file with the transformed data. The data can then be opened in SPEAR for resynthesis or further transformation.

### 5.3.2 Max/MSP

Max/MSP is a widely used graphical patching environment for realtime media processing. SPEAR SDIF data can be imported into Max/MSP using the CNMAT SDIF objects (Wright et al. 1999b). The `SDIF-buffer` stores the SDIF data in a named buffer which can be accessed using the `SDIF-tuples` object. `SDIF-tuples` outputs matrix data at the specified

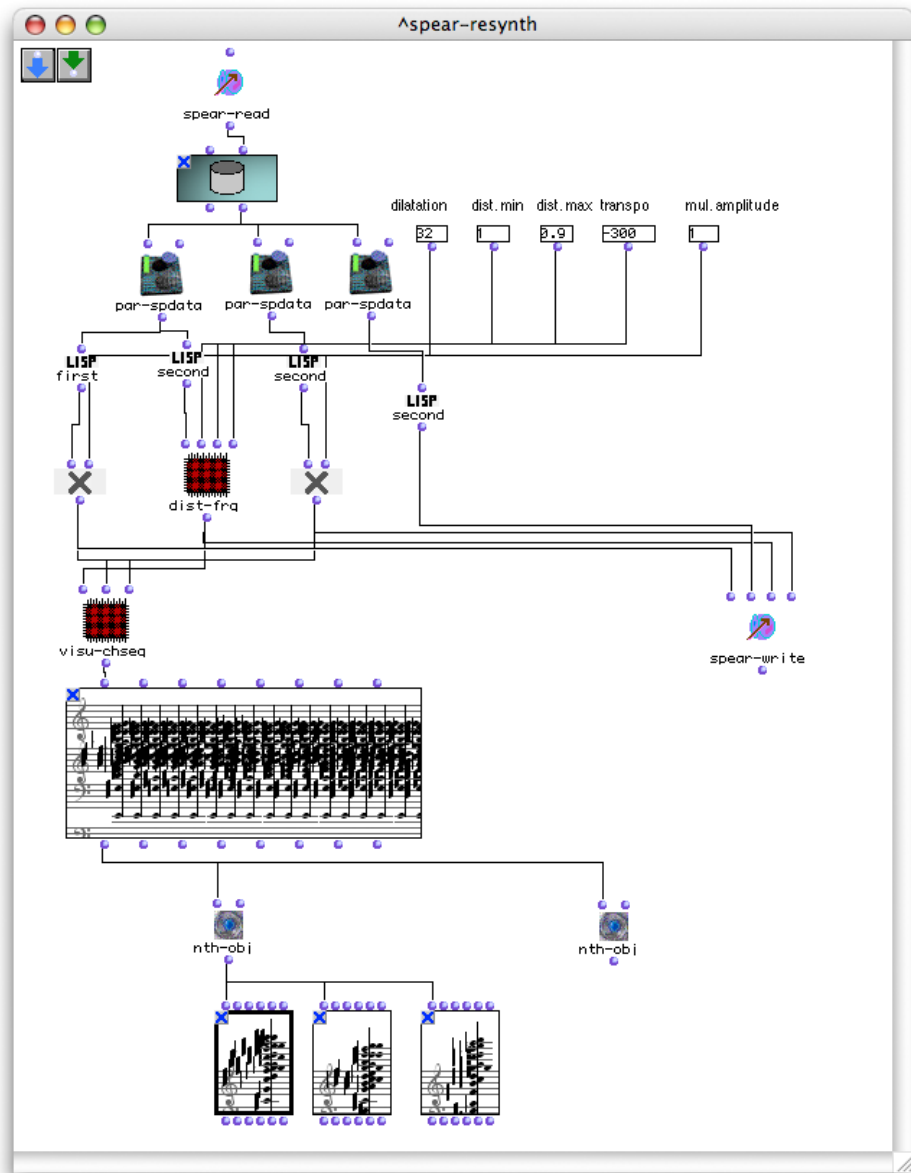


Figure 5.3: OpenMusic patch that reads and writes SPEAR data.