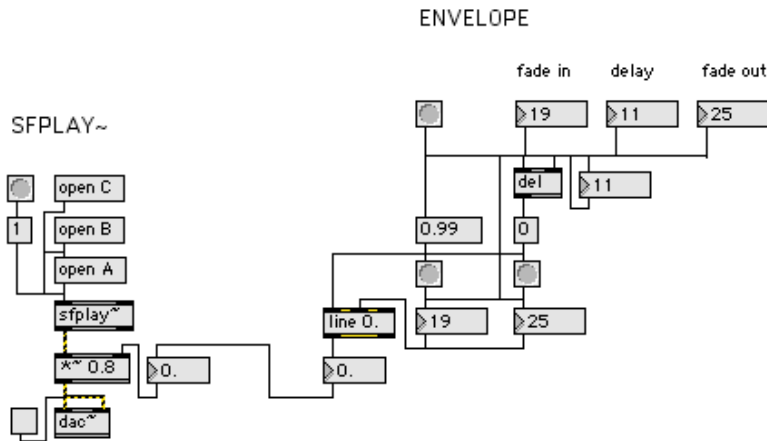
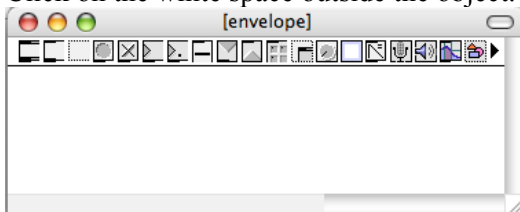


Composition: Electronic Media II
February 18, 2008
Sub-patches in Max/MSP

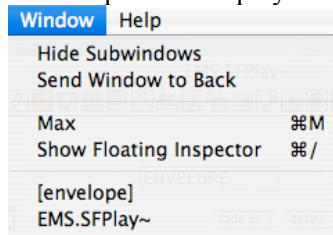
1. Consider the patch below:



- a. The patch on the left, denoted “SFPLAY~”, opens and plays soundfiles.
 - b. The patch on the right, denoted “ENVELOPE”, is an envelope control that acts on the float box that is patched into “*~ 0.8” of the “SFPLAY~” patch. (Note: the value 0.8 is not significant, here. This is a remnant of another patch that served as a building block for this patch.)
 - c. In many situations, a window in Max can become overly crowded when patches like these interact.
 - d. The solution is to use *sub-patches*. The word *sub-patch* is synonymous with *sub-window*.
 - e. It will be easier to define and describe the term *sub-patch* by first creating one.
2. Create a “patcher” object as follows:
- a. Drag an object icon from the palette and position it anywhere on the screen.
 - b. Type “p envelope”
 - c. Click on the white space outside the object. A window like the one below will appear:



- d. This is a sub-patch and has the following characteristics:
 - i. It is a patch window with the same features as any other patch window.
 - ii. The name of the patch is in brackets.
 - iii. The sub-patch is displayed in the **windows** menu, as shown below:



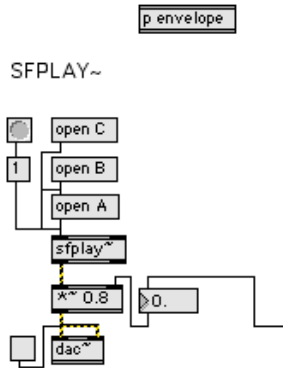
- iv. The sub-patch is saved as part of the main patch and will not be displayed in any Apple Finder windows. Unless.
- v. If the sub-patch is saved while open, it will henceforth appear in any Apple Finder windows.

3. Ignore the sub-patch window and notice the main patch window.

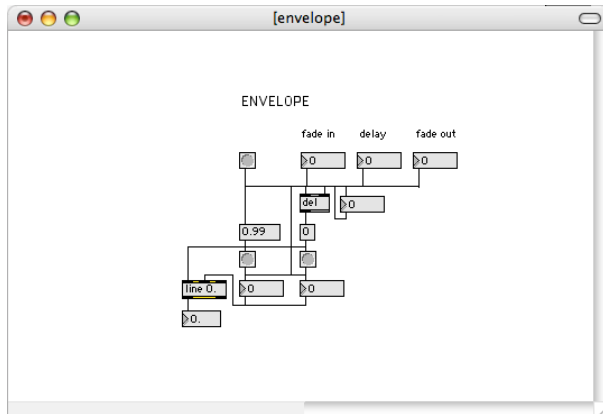
a. The object “p envelope” will appear like the one below:



b. Position “p envelope” above and to the right of the “SFPLAY~” patch. Align the left edge of “p envelope” to that it is on the same vertical plane as the float box that is patched into “*~ 0.8”, as shown below”



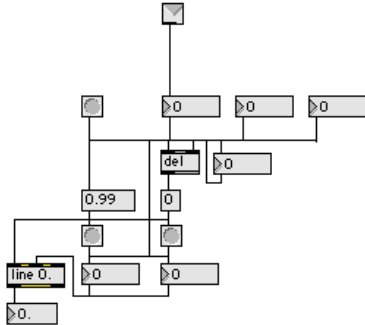
4. Draw a rectangle around all of the elements of “ENVELOPE” and copy and paste these into the sub-window [ENVELOPE], as shown below:



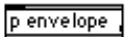
a. In the main patch window, cut or delete the elements of “ENVELOPE”. Remember the meaning of the number boxes with which they are associated.

5. In the [envelope] window, do the following:

- Cut or delete all of the comment boxes, since they will be in way of the next actions.
- From the palette, drag in **inlet** icon into the window.
- Position the **inlet** icon above the “fade in” number box and patch its outlet to the number box inlet, as shown below:



6. In the main window, notice that “p envelope” looks like the one below:

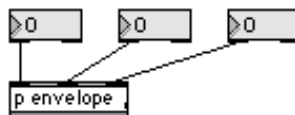
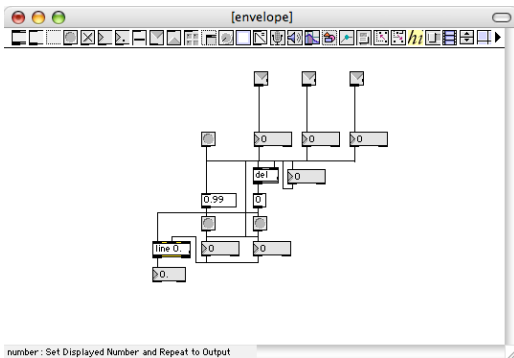


- Notice the an inlet appears on the left of the object.
- This inlet is invisibly patched to the inlet icon in the [envelope] window. This icon, in turn, is patched into the “fade in” number box.
- In the main window, place a number box above “p envelope” and patch it into the left inlet, as shown below:

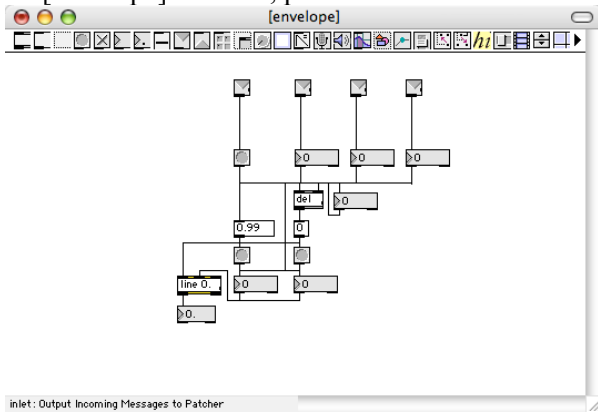


- Lock both windows, then move this number box and see that it acts on the “fade in” number box in [enevelope].
- Yay.

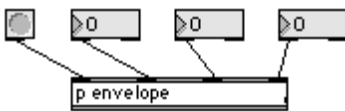
7. Repeat Steps 5-6 for “delay” and “fade out”, as shown below:



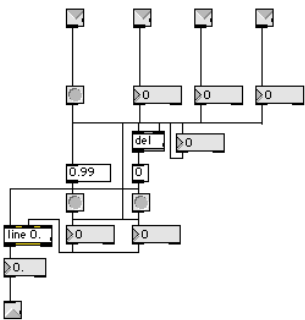
8. In the [envelope] window, place an inlet icon above the bang button and patch it, as shown below:



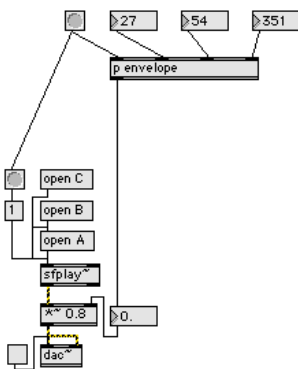
9. In the main window, place a bang button above “p envelope” and patch it into the new inlet that has appeared, as shown below:



10. In the [envelope] window, drag an outlet icon into the window, position it beneath the bottom float box, and patch it in, as shown below:



11. In the main window, patch the new outlet that has appeared on the lower left of “p envelope” into the float box that is patched into “*~ 0.8”, as shown below:



a. Patch the bang button that is positioned above and to the left of “p envelope” to the bang button above message box “1”, as shown above. This will allow the top bang button to trigger the playback of sfplay~ and start the envelope process.

12. Sub-patches like this are very common and can be used in many situations. They are most frequently used to contain elements of a patch that are grouped together to perform on type of function.