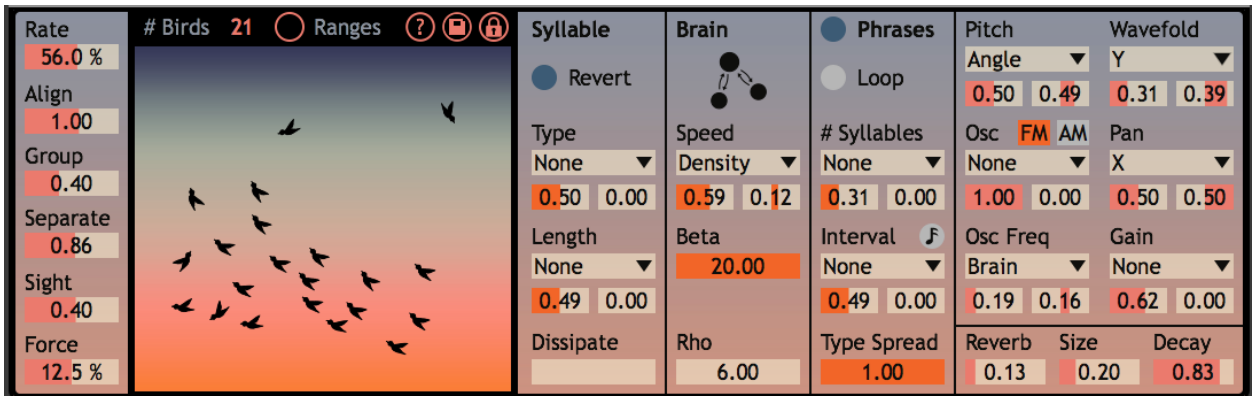
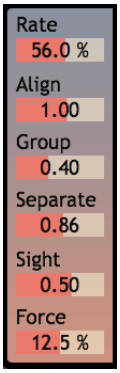
Songbird User Manual



To install:
Unzip the folder and drop the folder called “Songbird” in this exact location in order for presets to load correctly: *ableton/user library/presets/instruments/max instrument*
For best results or if you are having issues, make sure you are using the latest version of max/msp. You do not need to have a license if you are using Live suite. Download the newest version here: https://cycling74.com/downloads and once downloaded go to the ableton Preferences > Library and set the newly downloaded version of max to the one ableton should use. (Also you can try to see if it works fine with your bundled version first).
Additional Installation steps for Windows:
The bird images may not display on widnows. Following these instructions seems to resolve it. I’m not sure if images will work with windows below Live11 or not. Mac it is no problem.
https://help.ableton.com/hc/en-us/articles/209773125-Using-Video

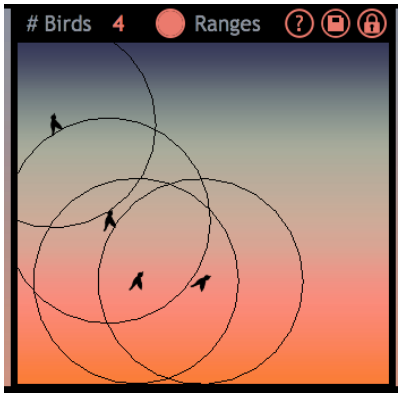
Synopsis
Songbird is a maxforlive instrument. It has three main parts: the flocking simulation, a simple model of a songbird brain, and a simple model of a syrinx (the vocal organ of birds). The flock consists of multiple birds, each bird is an independent sound source. Each independent sound source has its own bird brain and syrinx to make sound with. The flocking simulation itself serves as a source for modulations of various audio parameters. With the addition of FM, wavefolding, and reverb options it is great for different textures, drones, glitchy sounds, harsh sounds, creepy/sad/distant sounds, and of course bird sounds!

<u>The flocking simulation</u>



The device uses a classic boids flocking algorithm of which there are several key parameters to control it on the left side. Rate sets the framerate of the simulation, align sets the amount birds will align their velocities with other birds in their sight, group sets the amount birds will group together with other birds in their sight, separate sets how much space birds would want to give each other. Sight sets the radius birds will look for other birds, which can be visualized if the Ranges parameter

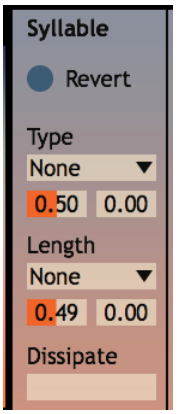
is on (shown in the next section), and force is the strength of the movement force force for each bird.



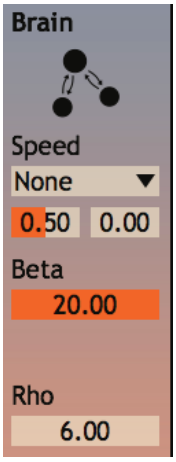
The image on the right shows the state of the birds in the flocking simulation. In this image, Ranges is set to on so you can see the radius of each birds' sight as dark circles. Here above the display you can set the number of birds, randomize the birds' positions+velocities+random spray values and you can also save the current positions+velocities+spray values so that you can recall a state upon loading a preset or live session. You can also lock the playback of audio and running the simulation to live's transport if you want it to stop when the transport isn't running.

Audio parameters

To the right of the display there are various parameters for the bird brain, syrinx, and effects. There are many parameters that have modulation options. In the below image the Type and Length parameters exemplify this. They all follow the same format which consists of a dropdown menu for selecting a modulation source, a slider for the center value of the parameter (below the menu on the left), and a bipolar slider for setting the amount of modulation it can receive (below the menu on the right). In the image below, the Type parameter has no modulation source (the menu is set to "None"), the center value is set to "0.5" or 50% and the modulation amount is at "0.00" or 0%. Each parameter with modulation options follows this same format.

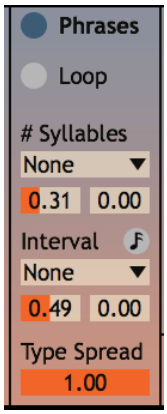


Here is the section for syllables. In a bird song, syllables are the individual sounds and when strung together they can make a song. The Revert parameter allows the brain and syrinx to revert to an initial state at the end of each syllable so that each syllable is made correctly to the models. This allows for more pronounced envelopes. If Revert is off the envelopes may be more fluid and perhaps not as bird-like. Type determines the type of syllable the bird will sing. Length sets the length of each syllable. At 50%, it follows the length that is appropriate for the model. Dissipate sets how quickly energy or volume dissipates from the start of each syllable, almost like having a shorter decay of an envelope.



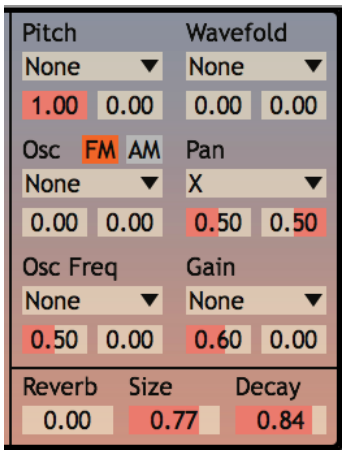
The next section over is the brain model. Speed sets the speed of the brain movements for each syllable. At 50% it matches the model appropriately. Below that, the brain will be too slow to finish the syllable unless the Length parameter from before is altered. Above 50%, the brain will move faster and at first will make more trill-like sounds, but s values get even higher the brain (which controls the vocal model of the syrinx) will start aliasing and you can get some aliasing/almost ring mod or downsample effects. Beta and Rho are two constants

in the brain model, at “20” and “6” respectively, they match the model of the brain. Deviating from that can create variations in the brain envelopes.



Phrases allows phrases or sentences of syllables to be created with an optionally interval of silence between them to make the birds sound more realistic. If off, then syllables will just be continuously sounded according to the syllable Type parameter above. As mentioned, phrases have a set Interval between them. If Loop is off, this interval is silence, however, if Loop is on then a phrase is looped until the interval ends and a new phrase is sung. # Syllables sets the number of syllables created in a phrase. The Interval time also has an option to used tempo synced note amounts. Type Spread sets how much deviation a phrase will apply to the Type of syllable it uses, where the center is based on the syllable Type set, described previously.

In this last section there are several effects options. Firstly we can control the central pitch of the birds. At “1.00” or 100%, the pitch is the original pitch of the model, of which we can tune down will lower values. Below that are a couple parameters to control an internal sine oscillator which can be applied as FM or AM. The two parameters for that are the depth and the frequency of the modulator. To the top right we have a simple wavefolding parameter, and below that is options for panning and gain. At the very bottom are a few parameters for a simple yaffr2 reverb.



I hope you enjoy this device! Please email me if you have bugs or other issues:
dillonbastan@gmail.com
More: http://dillonbastan.com