the process of breeding imaginary life forms

cello part

by Mia Windsor (2022)

Performance Instructions

the process of breeding imaginary life forms is an interactive evolutionary piece. The score consists of individual ideas that breed together, and sometimes mutate. Many of the outcomes of the piece are up to the performers and their communication.

This piece is exactly 10 minutes long, and should be mapped to a stopwatch timer. The score consists of repeating notated events and instructions for improvisation.

There are no tempo indications for this piece, you may play each idea at any speed provided you are able to play through the idea at least once in the time you are given to play it. You may repeat the idea as many times as you wish. Pauses have occasionally been placed in the score so that you can let the note vibrate until it has faded away. Do not play all the ideas at the same tempo. Time signatures have been used if useful for rhythmic content, though are sometimes omitted if not relevant.

If the time is up for the idea you are currently on, move onto the next instruction as smoothly as you can. If the next instruction is a rest, stop instantly.

Written Instructions

‘breed with [instrument]’

This instruction indicates that you must attempt to breed the idea you have just been playing with what the instrument specified is currently playing (this instrument will have also been playing this while you played your notated idea).

Like in real biological reproduction, there is a multitude of ways that the characteristics of each individual can be swapped, which would typically take place at random. However, certain characteristics are retained over thousands of generations *if* they provide an advantage for survival in their environment i.e. they are the fittest. With this in mind, I have set up some guidance for how I (with my ears being the environment) would define ‘fitness’ when breeding ideas together. A selection process if you will.

The ultimate goal for fitness is to find ways to combine the timbral aspects of the sounds you are hearing.

Try to think especially about how this can be carried out vertically, such as combining two single sounds into one, rather than layering separate sounds or playing them one after another. Fluctuations and changes in envelope may well, however, exist within a single sound.

If you notice that one of the ideas you are breeding makes use of multiple different sounds, feel free to breed them into multiple separate sounds, but still create these separate sounds vertically, unless again, you are thinking about fluctuations or envelope within a sound.
The goal is not necessarily to find a 'middle-ground' between ideas. If this occurs and works, that is completely fine. However, if you find yourself gravitating towards certain timbral characteristics, you're welcome to let them predominate.

Here are some ways that you could listen to and think about timbre:

Notice the spectrum of the sounds, perhaps one idea is richer in higher harmonics and is brighter whereas the other sounds duller. Or perhaps one idea contains more 'noise' whereas the other contains more pitch.

Notice the envelope of both sounds. Perhaps one has a fast staccato attack that does not sustain, but has a very slow release and perhaps the other has a very slow attack, sustains and abruptly cuts off.

Do not let specific pitches form a part of the breeding process, unless they are contained within a sound (i.e. glissando or vibrato).

More information on envelopes (if not familiar with the terms attack, decay, sustain, release).

https://www.youtube.com/watch?v=Q-ot9AaJx-Y

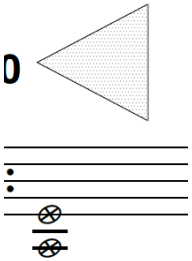
'continue'

This means continue the idea you have just developed through the breeding process
but stop actively breeding with the material that the other instrument is playing.

‘mutate [instrument]’

Mutation occurs when the structure of the gene changes. This can often result in quite drastic variations from the original parent. When instructed to mutate you should listen to what the instrument specified is playing and interact with it timbrally, attempting to add sounds that aren’t already contained in its content.

Notation



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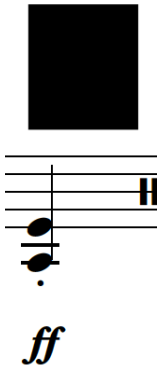
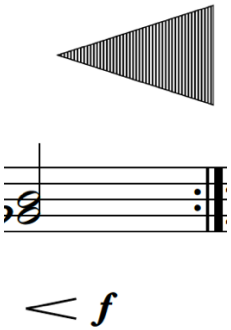
‘Air sound’: use your left hand to gradually stop some of the pitch from getting through.

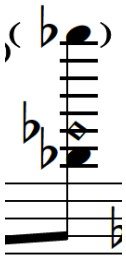


ff

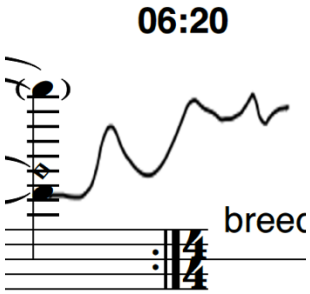
Overpressure.



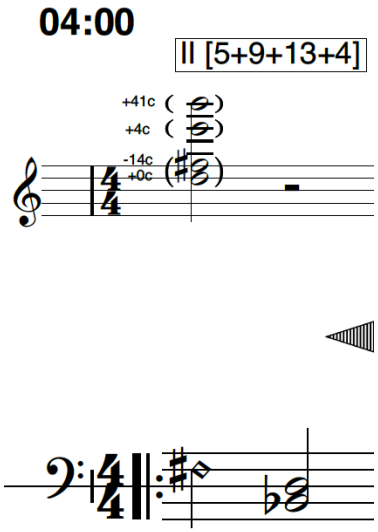
Gradually increase bow speed and bow pressure so the note will fragment and granulate.



Artificial harmonic: normal note-head indicates position of held down finger, diamond note-head indicates position of finger playing the harmonic, and bracketed note-head indicates the sounding pitch.



‘ Seagull effect’: up and down glissandi from the artificial harmonic specified without changing the distance between your fingers.

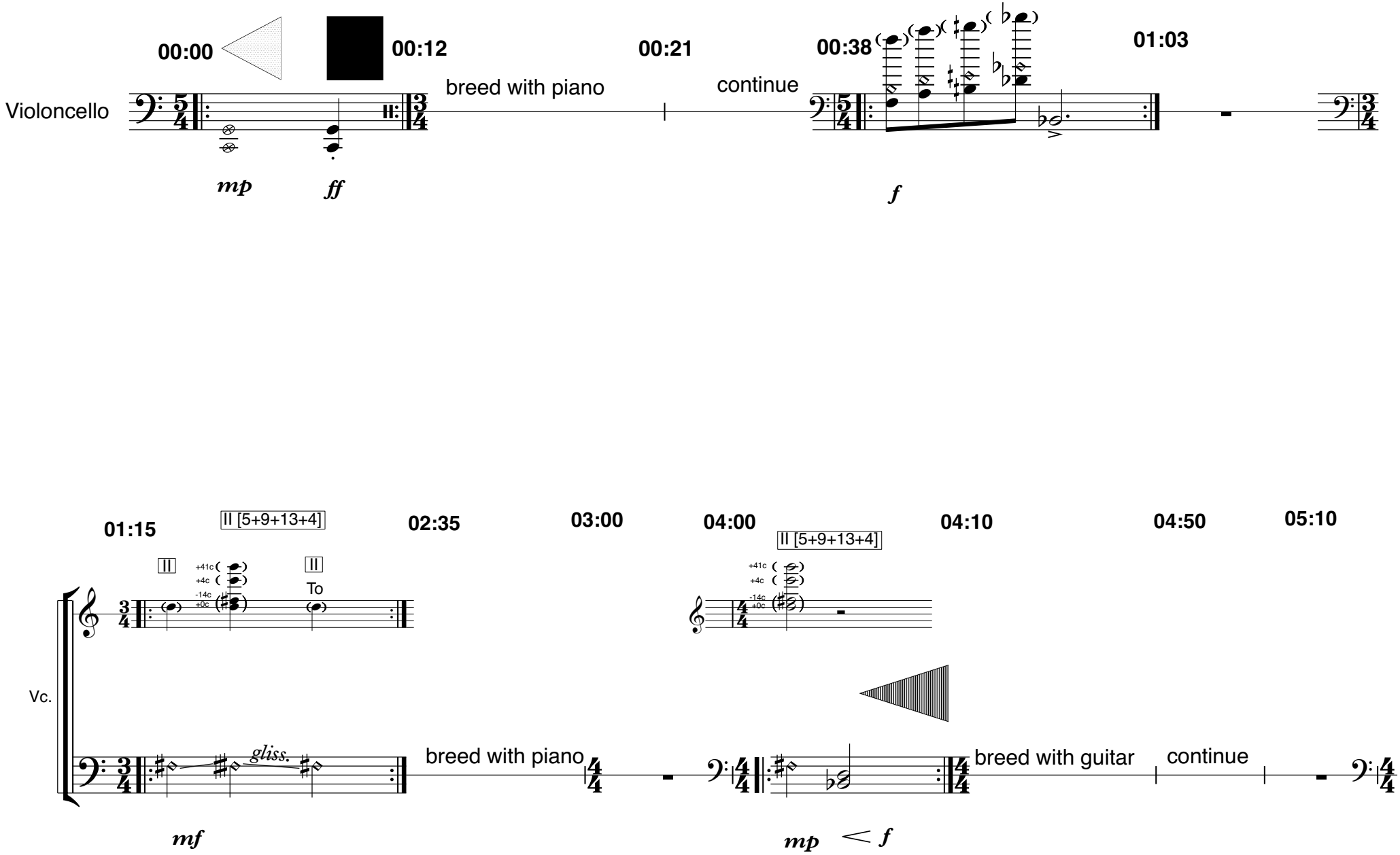


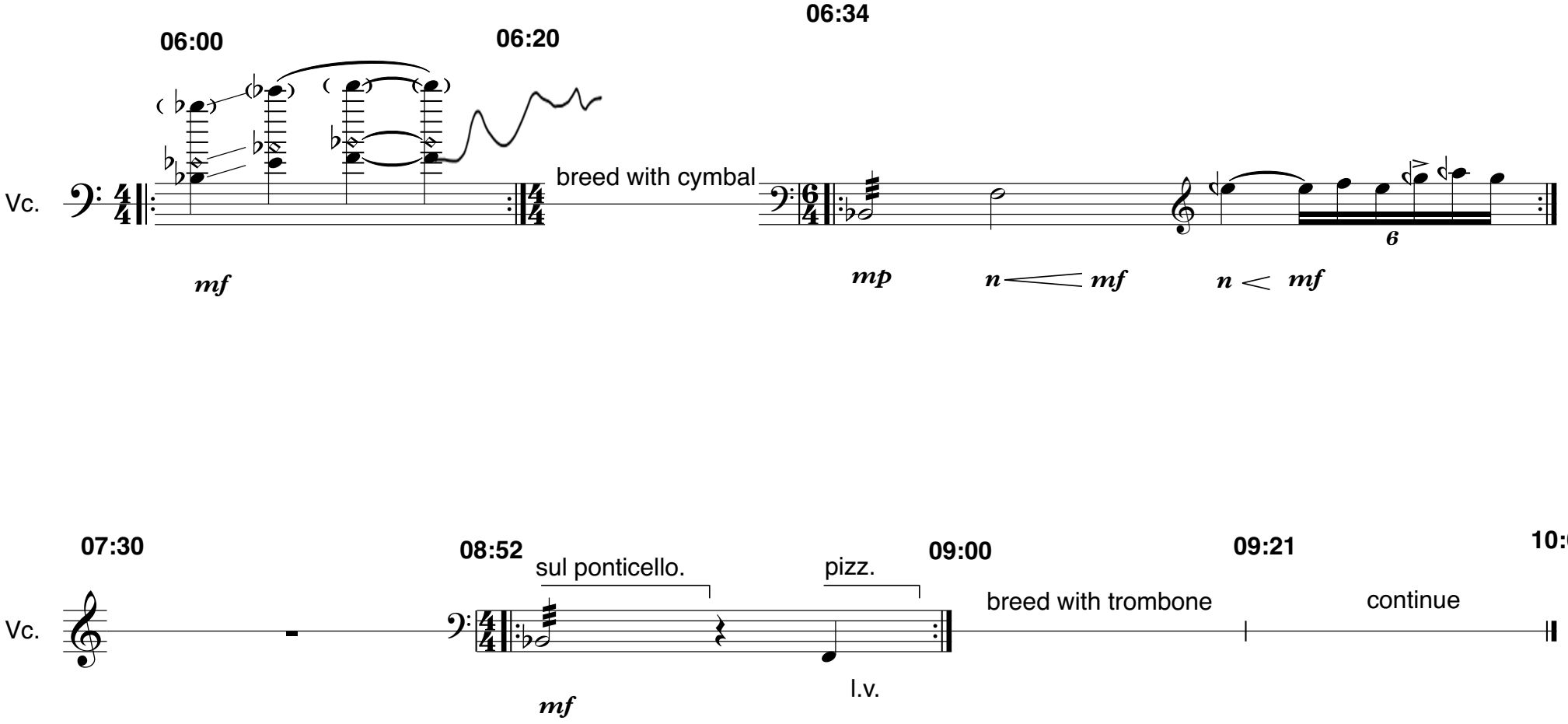
Multiphonic:

This should be an attempt to find the hand position, bow speed/pressure and point of contact that is acceptable enough to several harmonics so they can sound together. Ellen Fallowfield recommends a light left-hand finger position with a medium-slow, fairly heavy bow stroke, further from the bridge than normal harmonic playing. The bow stroke will be lighter, faster and closer to the bridge if the multiphonic contains higher components such as the 12th or 13th harmonic.[1] Dynamics have been specified, though if a different dynamic works better, that is completely fine.

A multiphonic is indicated with the letter M, followed by the string specified and the particular harmonics it should bring out; these are also indicated above the stave. The approximate finger position for the multiphonic is indicated in the lower stave.

[1] Ellen Fallowfield, 'Multiphonics: Basics', *CelloMap,* [26 January 2021]


00:00
00:12
00:21
00:38
01:03
Violoncello
breed with piano
continue
mp
ff
f
01:15
II [5+9+13+4]
02:35
03:00
04:00
II [5+9+13+4]
04:10
04:50
05:10
II
To
Vc.
gliss.
breed with piano
breed with guitar
continue
mf
mp
< f


06:00
06:20
06:34
Vc.
breed with cymbal
mf
mp
n mf
n mf
6
07:30
08:52
09:00
09:21
10:00
Vc.
sul ponticello.
pizz.
breed with trombone
continue
mf
l.v.