

# Recursion (for S)

Benjamin R. Fuhrman

Circa Seven Minutes.



### **Notes on Performance**

To perform *Recursion (for S)*, you will need access to a computer with Ableton Live and Max4Live. It was created and has been tested with Live Suite 9 and Max4Live 6. Microphones for the Bass Clarinet should be put on channels 1 and 2 (stereo track 1), although this can be changed in Live - just make sure to change the delay (stereo track 2) line to reflect this as well. Outputs are set to Master Outs 1 and 2, but can be reconfigured for other pairs as needed.

### **Program Notes**

*Recursion (for S)* was commissioned by clarinetist Will Cicola, who was looking for new pieces that explored both quarter tones, and computers. The piece was created by taking extremely high res samples of Will's bass clarinet (176.4kHz, 24Bit), and using those as the basis for spectral processing and computer transformations that would generate all of the computer material with the exception of the delay line. Spectrums were edited, samples were processed, and instruments were programmed to create the dreamlike texture of the computer as the bass clarinet floats on the surface. Yet, in the end, all that the audience is really hearing is the bass clarinet. Just in a multiplicity of ways that support the live performer as they come full circle through the instrument, the piece, and the computer.



*To Will Cicola*



# Recursion (for S)

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12-3-13

$\text{♩} = 140$

Computer

sample/reverb on

S

Bass Clarinet

Comp.

3 playback

B. Cl.

Comp.

5 add "electronic" noises

B. Cl.

B. Cl.

8

16

B. Cl. <sup>10</sup>

*mp* *mp*

B. Cl. <sup>12</sup>

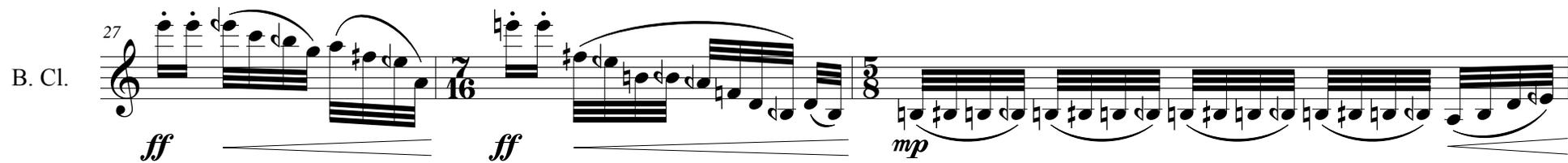
*f* *mp* *f* *mp* *f* *mf* *f* *mf*

B. Cl. <sup>17</sup>

*mf* *f* *mf* *f* *mf* *ff* *mf* *ff* *mf* *ff*

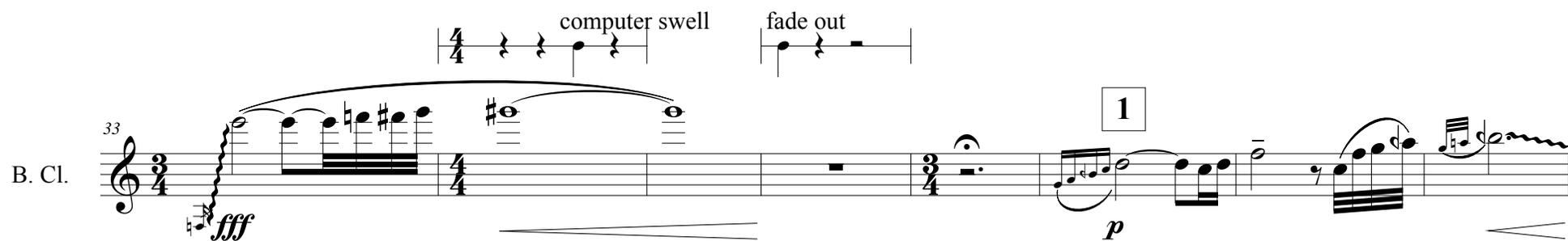
B. Cl. <sup>23</sup>

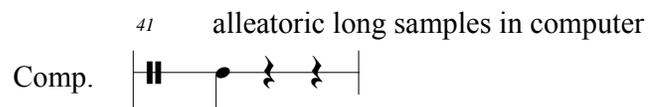
*mf* *mp* *ff* *mp* *ff* *mp*

B. Cl. 

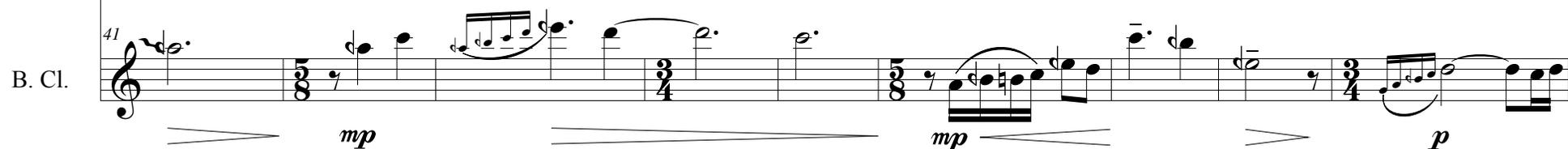
B. Cl. 

$\text{quarter note} = 105$

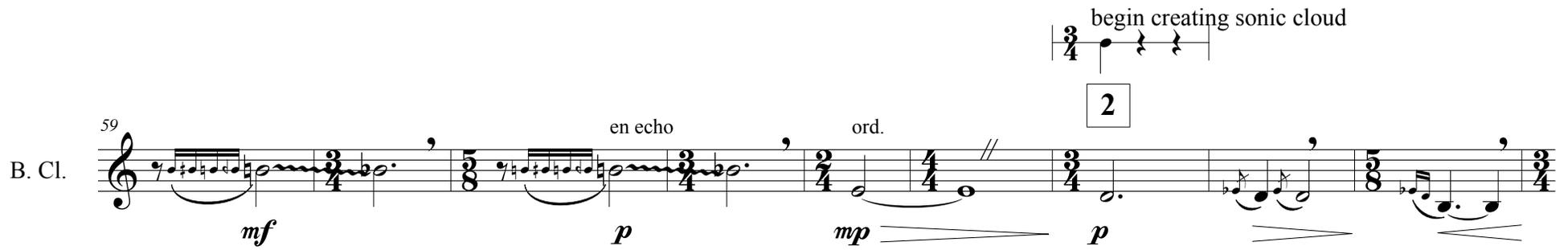
B. Cl. 

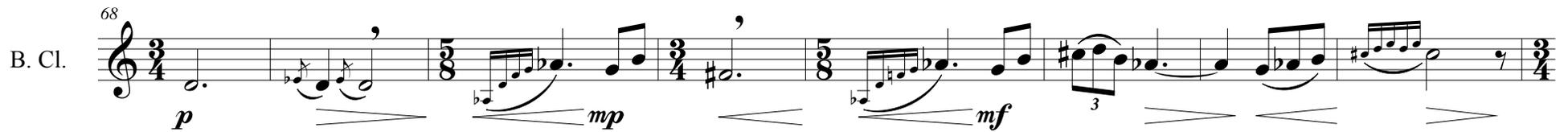
Comp. 

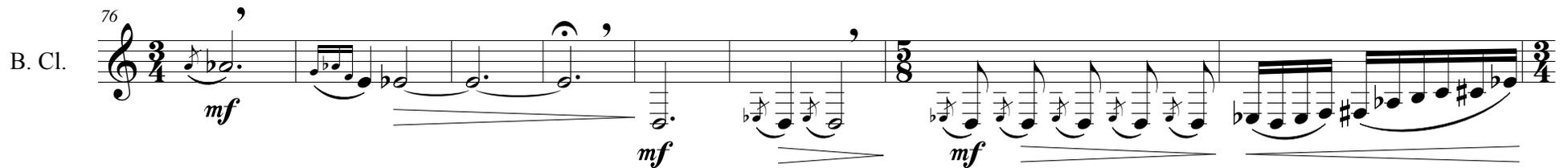
alleatoric long samples in computer

B. Cl. 

B. Cl. 

B. Cl. 

B. Cl. 

B. Cl. 



B. Cl. 113 *mp* *mp* *mp*

B. Cl. 117 *mf* *mf*

B. Cl. 123 *f* *f* *mf*

B. Cl. 131 *p* *mf* *mf* *f* *ff* *mp*

en echo ord. en echo

cloud - peak intensity

B. Cl. 139 ord. Growl

*ff* *ff*

B. Cl. 147

*fff* *mf* *f* *f*

B. Cl. 153

*f* *mp* *mp*

B. Cl. 159 en echo ord.

*ff* *mp* *p* *mf*

♩ = 140

transition out of cloud

B. Cl. 166

*mf* *mp* *mp* *mp*

B. Cl. 172

*f* *mp* *mp* *mp* *f*

Comp. 177 playback of first sample

4

B. Cl.

*mp* *f* *mp* *f* *mp* *f*

return of "electronics"

B. Cl. 180

*mp*

B. Cl. <sup>182</sup>

*mf* *mp*

B. Cl. <sup>184</sup>

*f* *mp* *f* *mp* *f*

B. Cl. <sup>187</sup>

*mp* *mp*

B. Cl. <sup>189</sup>

*f* *mp* *f* *mp* *f* *mf* *f* *mf* *f*

B. Cl. <sup>194</sup>

*mf* < *f* *mf* < *f* < *ff* *mf* < > *f* < *f*

B. Cl. <sup>200</sup>

*mf* < *mp* *f* *mp*

B. Cl. <sup>203</sup>

*ff* *mp* *ff* *ff*

B. Cl. <sup>206</sup>

*mp*

208  
B. Cl.

*mf* *mp*

210  
B. Cl.

*mp*

212  
B. Cl.

*ff* *mf* *ff* *mf* *ff*

215  
Comp.

peak sample/electronics intensity

215  
B. Cl.

*mf* *ff*

B. Cl. 217

*mf* *ff*

B. Cl. 219

fade out computer - except reverb

*fff*

B. Cl. 223

reverb swell - hold till end

Growl

*mp* *ffff*