

Kimmo Hakola  
*Le Sacrifice*  
2002  
Helsinki OS X  
2005



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The setup and the execution of the electroacoustic part  
of this work requires a Computer Music Designer (Max expert).

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## Table of Contents

<b>Table of Contents</b>	<b>2</b>
<b>Work related information</b>	<b>3</b>
Performance details	3
Detailed staff	3
Realisation	3
Useful links on Brahms	3
<b>Version related information</b>	<b>4</b>
Documentalist	4
Realisation	4
Upgrade Motivation	4
Other version(s)	4
Electronic equipment list	5
Computer Music Equipment	5
Files	6
<b>Instructions</b>	<b>7</b>
Stage setup diagram - Stage Setup	7
Install - Installation	9
Patch presentation - Concert Patch	9
Patch presentation - Patch Use	9
Le sacrifice keyboard shortcuts	9
MIDI keyboard	9
Stage setup diagram - mike remark	9
Patch presentation - Le Sacrifice Midi mixer	9
midi mixer	9
Patch presentation - Le Sacrifice: Sections	10
Sections	10
Patch presentation - Le Sacrifice: Audio Matrix	10
Audio/MIDI setup diagram - Le Sacrifice: Loudspeakers position	14
Loudspeakers position	14
Details - Le Sacrifice: Soundfiles List	14
Le Sacrifice Soundfiles List	16
Le Sacrifice Soundfiles List	16
Details - Le Sacrifice: Qlists	16
Exemple : qlist for section 1 :	16

## Work related information

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### Performance details

- Dec. 11, 2002, Paris, Forum des images

Publisher : Fennica Gehrman

### Detailed staff

- soloists: 1 solo soprano, 1 violin
- 2 flutes (also 1 piccolo), 2 oboes (also 1 English horn), 2 clarinets (also 1 bass clarinet), 2 bassoons (also 1 contrabassoon), 2 horns, 2 trumpets, 2 tenor/bass trombones, 1 tuba, 3 percussionists, 1 harp, 1 piano, 1 electronic/MIDI keyboard/synthesizer (also 1 celesta), 2 violins, 2 violas, 2 cellos, 1 double bass

### Realisation

- Serge Lemouton

### Useful links on Brahms

- [Le Sacrifice](#) oratorio after Andrei Tarkovski (2002), 50mn
- [Kimmo Hakola](#)

## Version related information

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Performance date: Aug. 19, 2005

Documentation date: Aug. 19, 2005

Version state: valid, validation date : May 3, 2018, update : May 6, 2021, 3:10 p.m.

### Documentalist

You noticed a mistake in this documentation or you were really happy to use it? Send us feedback!

### Realisation

- Marko Myohanen (Computer Music Designer, Sound engineer)

Version length: 45 mn

Default work length: 50 mn

### Upgrade Motivation

New performance of the piece in Helsinki in 2005 (without Ircam intervention).

N.B. : "Le Sacrifice" has been played again in november 2008 by the Stockholm Royal Philharmonic Orchestra, but we didn't get the patch used for this performance ...

### Other version(s)

- [Kimmo Hakola - Le Sacrifice - transfert\\_mustica\\_ftp \(April 14, 2010\)](#)
- [Kimmo Hakola - Le Sacrifice - Creation \(Dec. 11, 2002\)](#)

## **Electronic equipment list**

### **Computer Music Equipment**

- 1 Macintosh G5 - *Apple Desktops* (Apple)  
Mac OS X
- 1 Sound Board - *Sound Board*
- 1 KX 88 - *MIDI Keyboard* (Yamaha)

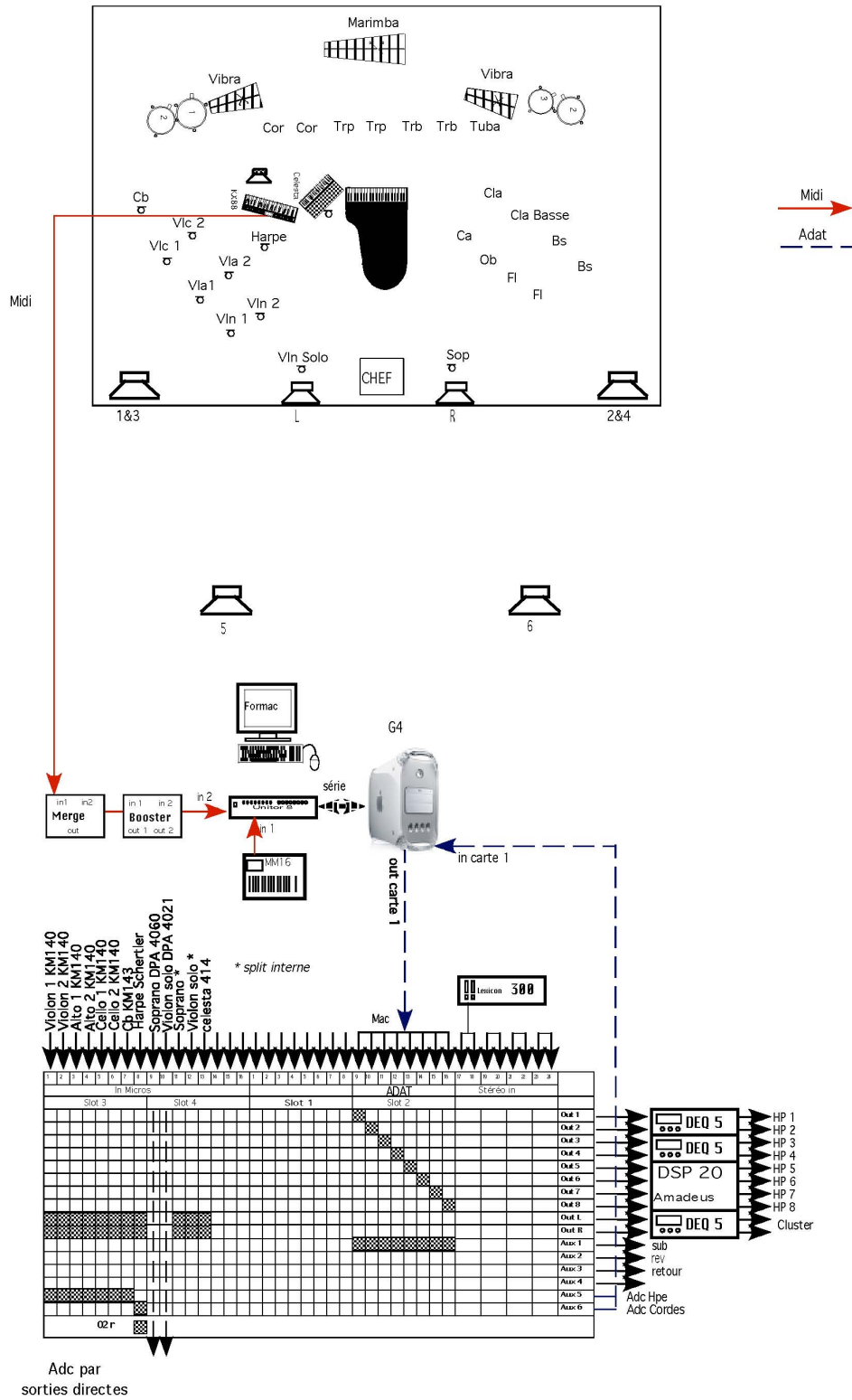
**Files**

File	Type	Author(s)	Comment
<a href="#">uploads/Hakola/Sacrifice/Helsinki2005/Sacrifice.concert2005.dmg</a>	Patch		Sacrifice.concert2005.dmg contains two main folder: The folder Patches gather lib folder containing all required library and patch files among them the concert patch: sarifice.helsinki The folder Sounds contains all sound files called by the concert patch

# Instructions

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## Stage setup diagram - Stage Setup

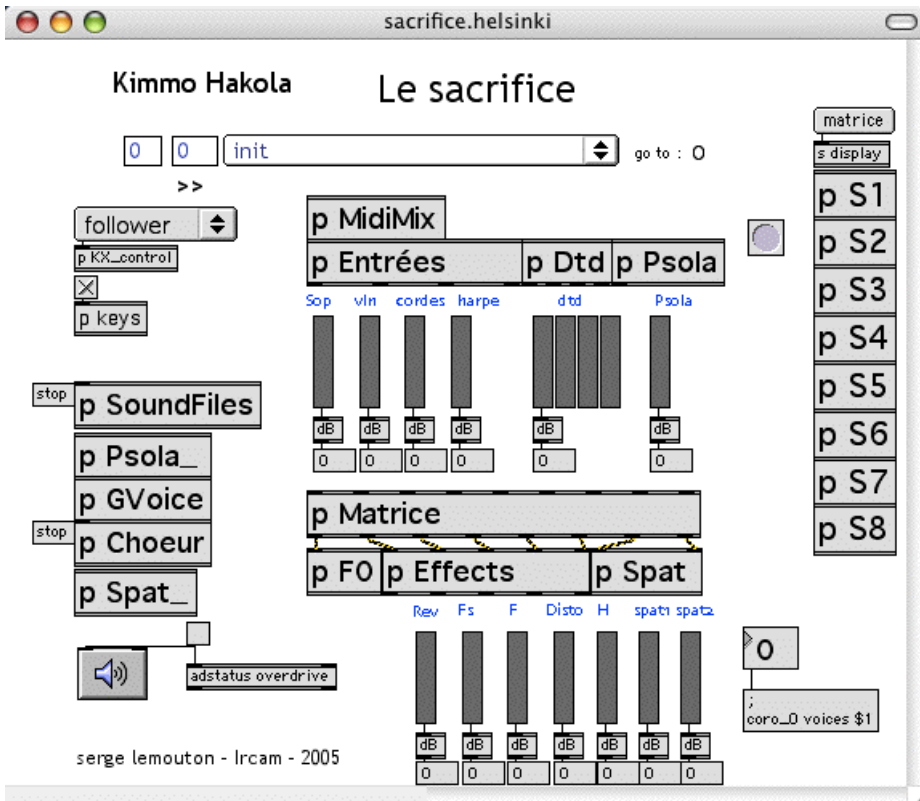




## Install - Installation

- copy the "Sacrifice.concert2005" folder on your hard disk
- launch max/msp 4.5
- set the max file preferences to point to /Sacrifice.concert2005/Patches/lib/ and /Sacrifice.concert2005/Sounds
- open the sacrifice.helsinki patch
- choose the section (cf Sections) you want to test with the menu located on the main window

## Patch presentation - Concert Patch



Main patch

## Patch presentation - Patch Use

### Le sacrifice keyboard shortcuts

- Esc = DSP on/off
- tab = next event
- suppr = stop all soundfiles

### MIDI keyboard

All the electronic events are triggered by the Orchestra midi keyboard. In section 7 and 8, it plays the psola-synthesized boy choir part.

### Stage setup diagram - mike remark

Do not forget the celesta amplification for section 3

## Patch presentation - Le Sacrifice Midi mixer

### midi mixer

A midi mixer is used to control the level of the real time transformation applied on the string section and on the harp.

The transformations are :

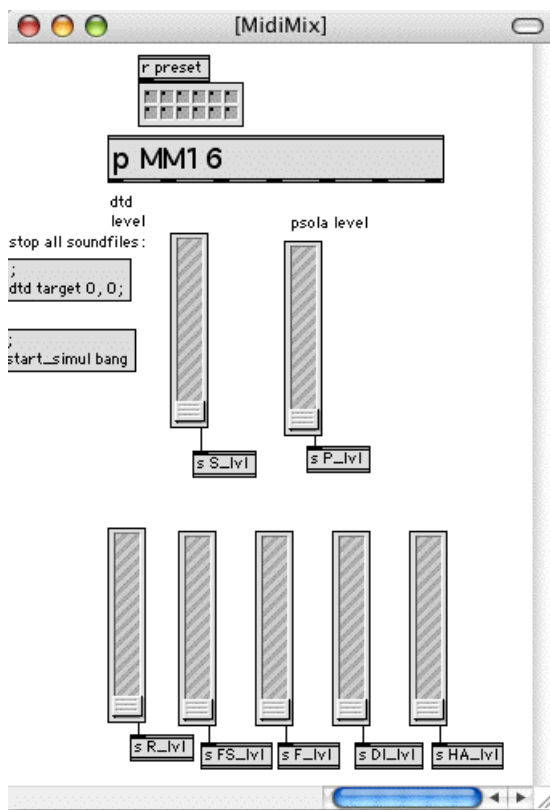
- Reverberation

- Frequency-shifter
- Filter
- Distortion
- Harmonizer

It controls also

- the Direct-to-Disk level
- the level of the psola synthesizer

For the creation a Kawai MM16 was used, you may have to modify the midi controllers numbers in the MM16 patcher



SacrificeMidiMix

## Patch presentation - Le Sacrifice: Sections

### Sections

Le Sacrifice is in 7 mouvements :

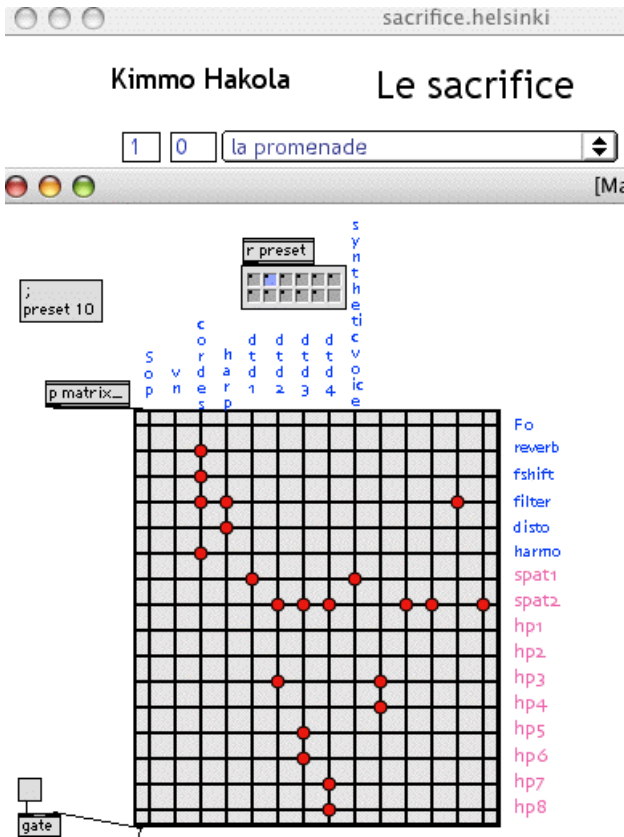
- 1. la promenade
- 2. la guerre
- 3. dans les demeures de la souffrance
- 4. le violon compresseur et la sorcière
- 5. le prophète
- 6. le feu
- 7. les arches de Saint André

There are 8 sections in the patch because the last mouvement is divided in two sections (from VIID)

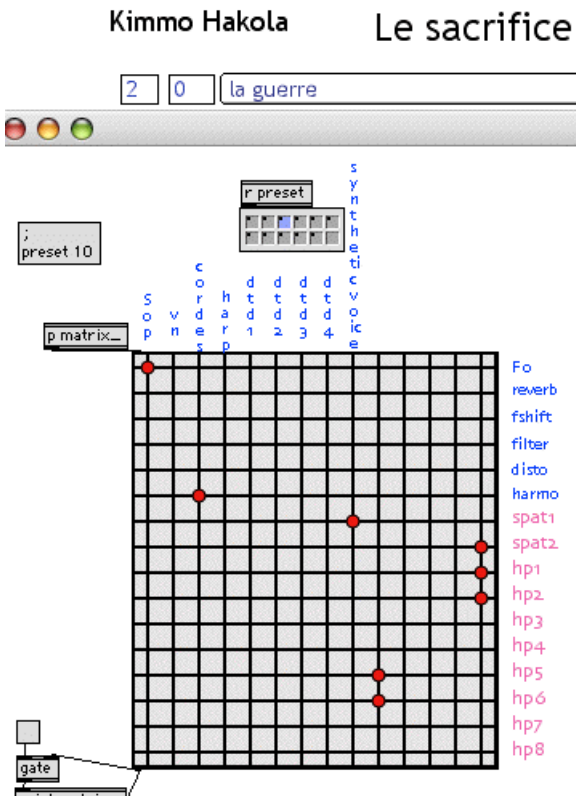
## Patch presentation - Le Sacrifice: Audio Matrix

For each section, the modules are patched in a different way

- section 1 : transformation on strings and harp, direct to disk, psola synthesis
- section 2 : harmonizer on strings, synthetic voice
- section 3 : no electronic
- ....

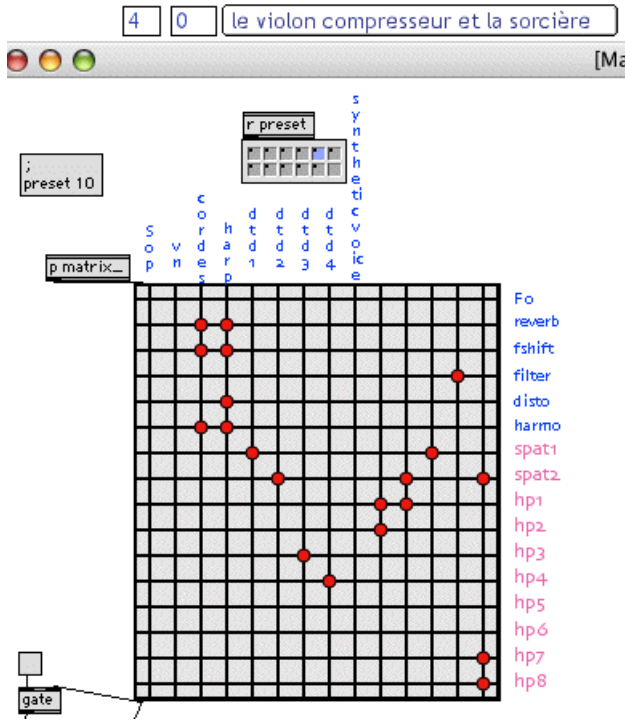


SacrificeMatrix1



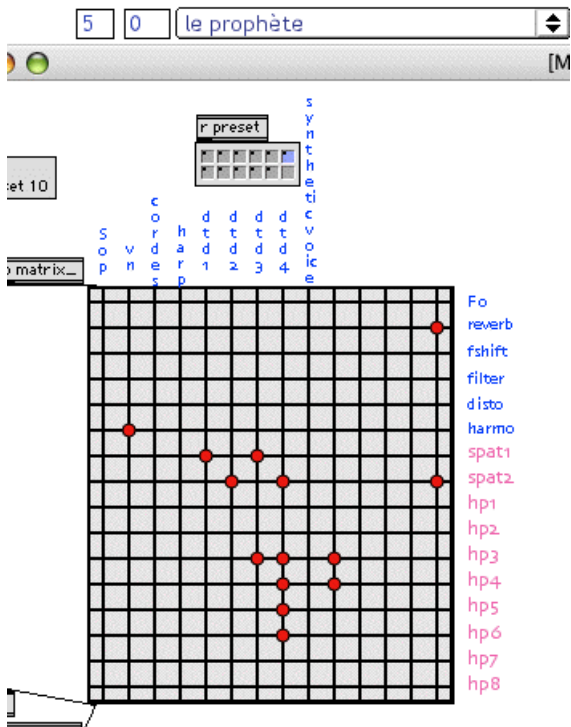
SacrificeMatrix2

# Kimmo Hakola Le sacrifice



SacrificeMatrix4

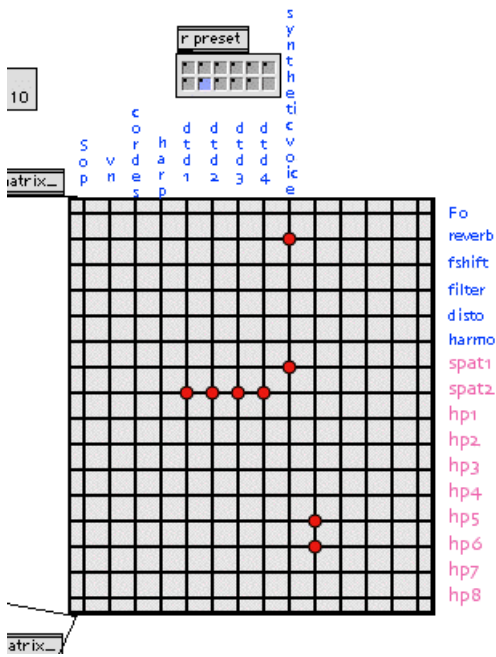
# Kimmo Hakola Le sacrifice



SacrificeMatrix5

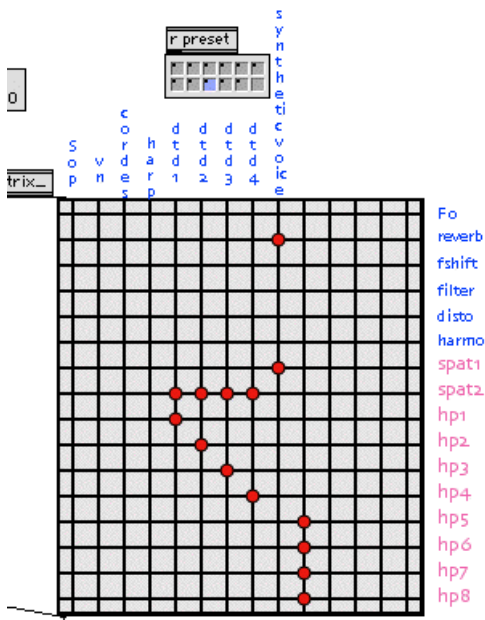
# Kimmo Hakola Le sacrifice

7 0 les arches de Saint André [M



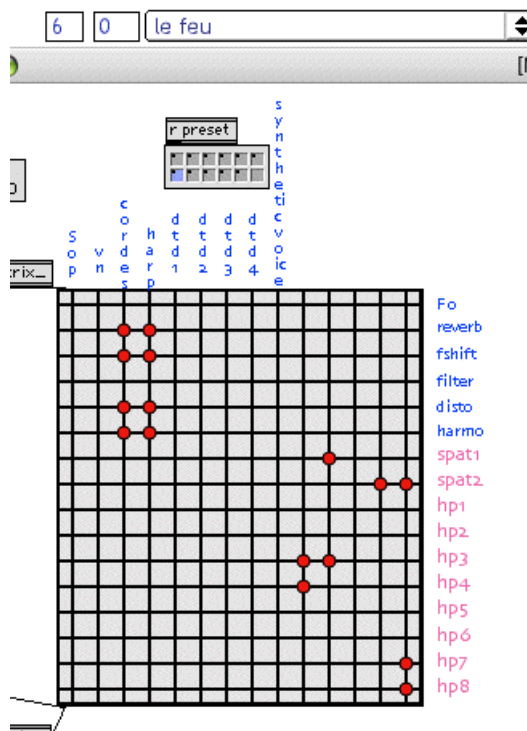
# Kimmo Hakola Le sacrifice

8 0 les arches (VID) [Matr



Kimmo Hakola

## Le sacrifice



SacrificeMatrix6

**Audio/MIDI setup diagram - Le Sacrifice: Loudspeakers position****Loudspeakers position**

- 1278 = surround
- 56 = ceiling
- 34 = stage

**Details - Le Sacrifice: Soundfiles List**

All the soundfiles played in "Le sacrifice" are referenced in a coll called "sf.coll". Its syntax is : soundfile\_number file\_name level\_in\_db transposition\_in\_cents output. The output number correspond to the dtd1 to 4 matrix input.

- 101, sacrifice101 0. 0 1;
- 102, sacrifice102 -9. 0 2;
- 103, sacrifice103 -6. 0 3;
- 104, sacrifice104 0. 0 4;
- 105, sacrifice105 0. 0 2;
- 106, sacrifice106 0. 0 3;
- 127, sacrifice127 -9. 0 1;
- 128, sacrifice128 -3. 0 2;
- 129, sacrifice129 -3. 0 3;
- 130, sacrifice130 -6. 0 4;
- 131, sacrifice131 -6. 0 3;
- 132, sacrifice132 -6. 0 2;
- 134, sacrifice134 0. 0 1;
- 135, sacrifice135 0. 0 2;
- 400, sacrifice401.L 0. 0 1;
- 401, sacrifice401.R 0. 0 2;
- 502, sacrifice502 0. 0 2;
- 505, sacrifice505 0. 0 2;
- 507, sacrifice507 0. 0 2;
- 509, sacrifice509 0. 0 2;

- 513, sacrifice513 0. 0 2;
- 515, sacrifice515 0. 0 1;
- 516, sacrifice516 0. 0 1;
- 523, sacrifice523 0. 0 1;
- 526, sacrifice526 0. 0 4;
- 527, sacrifice526b 0. 0 1;
- 528, sacrifice526b -3. -800 4;
- 530, sacrifice526 -3. 800 1;
- 533, sacrifice526 -3. 0 4;
- 535, sacrifice535a 0. 0 1;
- 635, sacrifice535b 0. 0 2;
- 536, sacrifice536 0. 0 1;
- 537, sacrifice537 0. 0 2;
- 538, sacrifice538 0. 0 1;
- 539, sacrifice539 0. 0 2;
- 540, sacrifice540 0. 0 1;
- 541, sacrifice541 0. 0 2;
- 542, sacrifice542 0. 0 1;
- 543, sacrifice543 0. 0 2;
- 544, sacrifice544a 0. 0 1;
- 644, sacrifice544b 0. 0 2;
- 545, sacrifice545 0. 0 2;
- 546, sacrifice546a 0. 0 1;
- 646, sacrifice546b 0. 0 2;
- 547, sacrifice547a 0. 0 1;
- 647, sacrifice547b 0. 0 2;
- 548, sacrifice548a 0. 0 1;
- 648, sacrifice548b 0. 0 2;
- 549, sacrifice549a 0. 0 1;
- 649, sacrifice549b 0. 0 2;
- 550, sacrifice550a 0. 0 1;
- 650, sacrifice550b 0. 0 2;
- 551, sacrifice551a 0. 0 1;
- 651, sacrifice551b 0. 0 2;
- 552, sacrifice552 -3. 0 1;
- 554, sacrifice554 6. 0 2;
- 555, sacrifice555 0. 0 1;
- 557, sacrifice557 0. 0 2;
- 801, quatuorfiltered01 0. 0 1;
- 802, quatuorfiltered02 0. 0 2;
- 803, quatuorfiltered03 0. 0 3;
- 804, quatuorfiltered04 0. 0 4;
- 805, quatuorfiltered05 0. 0 1;
- 806, quatuorfiltered07 0. 0 2;
- 807, quatuorfiltered09 0. 0 3;
- 808, quatuorfiltered11 0. 0 4;
- 809, quatuorfiltered13 0. 0 1;
- 810, quatuorfiltered15 0. 0 2;
- 811, quatuorfiltered17 0. 0 3;
- 812, quatuorfiltered19 0. 0 4;
- 813, quatuorfiltered21 0. 0 1;
- 814, quatuorfiltered24 0. 0 2;
- 815, quatuorfiltered27 0. 0 3;
- 816, quatuorfiltered30 0. 0 4;
- 817, quatuorfiltered33 0. 0 1;
- 818, quatuorfiltered36 0. 0 2;
- 819, quatuorfiltered39 0. 0 3;

- 820, quatuorfiltered42 0. 0 4;
- 821, quatuorfiltered44 0. 0 1;
- 822, quatuorfiltered46 0. 0 2;
- 823, quatuorfiltered48 0. 0 3;
- 824, quatuorfiltered49 0. 0 4;
- 825, quatuorfiltered50 0. 0 1;
- 826, quatuorfiltered51 0. 0 2;
- 827, quatuorfiltered52 0. 0 3;
- 828, quatuorfiltered53 0. 0 4;
- 829, quatuorfiltered55 0. 0 1;
- 830, quatuorfiltered57 0. 0 2;
- 831, quatuorfiltered59 0. 0 3;
- 832, quatuorfiltered61 0. 0 4;
- 833, quatuorfiltered63 0. 0 1;
- 834, quatuorfiltered65 0. 0 2;
- 835, quatuorfiltered66 0. 0 3;
- 836, quatuorfiltered67 0. 0 4;
- 837, quatuorfiltered68 0. 0 1;
- 838, quatuorfiltered70 0. 0 2;
- 839, quatuorfiltered72 0. 0 3;
- 840, quatuorfiltered74 0. 0 4;
- 841, quatuorfiltered76 0. 0 1;
- 842, quatuorfiltered78 0. 0 2;
- 843, quatuorfiltered80 0. 0 3;
- 844, quatuorfiltered81 0. 0 4;
- 845, quatuorfiltered82 0. 0 1;
- 846, quatuorfiltered83 0. 0 2;
- 847, quatuorfiltered84 0. 0 3;
- 848, Püchti 0. 0 1;
- 849, Tallinn 0. 0 2;
- 850, Pskovo-Pecora 0. 0 4;
- 851, Pskovo-Pecora 0. 0 3;
- 852, volée4 0. 0 2;
- 853, volée4 0. 0 2;
- 853, volée4 0. 0 2;

### Le Sacrifice Soundfiles List

[Lien vers le document](#)

### Le Sacrifice Soundfiles List

[Lien vers le document](#)

## Details - Le Sacrifice: Qlists

All the events are described in qlists located in the patchers located on the main patch right side.

### Exemple : qlist for section 1 :

```
# section 1;
----- 1;

0 1 dtd note 101;

distance1 8, 20 15000;

rotation1 0;


rotation2 0;
```



Spat1\_ source Az 45;  
Spat1\_ fact prer 48;  
Spat1\_ source Az 0;  
Spat2\_ source Dist 8.;  
gv liveControl 0;  
16000 dtd note 102;  
distance1 20, 1 60000;  
24000 dtd note 103;  
10000 dtd note 104;  
----- 2;  
0 2 dtd note 127;  
rotation1 15000;  
dtd note 105;  
4000 dtd note 106;  
dtd note 129;  
8000 dtd note 128;  
8000 dtd note 131;  
10000 dtd note 132;  
----- 3;  
0 3 Spat2\_ source Dist 16.;  
distance1 1 600;  
dtd note 134;  
rotation1 0;  
rotation2 0;  
Spat1\_ source Az 0;  
Spat2\_ source Az 0;  
----- 4;  
0 4 dtd note 135;  
rotation1 20000;  
rotation2 20000;  
----- 5;  
0 5 dtd note 131;  
----- 6;  
0 6 rotation1 0;  
rotation2 0;  
----- 7;  
0 7;

----- 110;

0 110 # truc end;

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