

 ARCHSIM
The logo for ARCHSIM features a stylized 'A' composed of horizontal lines, with a semi-circle on the left side.

—

 ARCHPLAY
The logo for ARCHPLAY features a stylized 'A' composed of horizontal lines, with a semi-circle on the left side.

WHY?

What is it?

What can it do for you?

Want to contribute? Want to be an A.C.T.O.R. ?

Orchestration is a SKILL to be acquired (the “Art of Orchestration”).

It supposes basic knowledge, analysis of reference scores and much practice.

In this respect it is not all too different from learning traditional counterpoint or harmony.

... or is it?

PART-A

- 1- THE STUDY OF ORCHESTRATION AND THE COMPREHENSION OF ITS NATURE AND MECHANISMS
- 2- TOOLS ONE CAN DREAM OF: An Orchestra in each classroom ?
- 3- THE MORE DOWN-TO-EARTH REALITY: The hopes raised by the new multitrack recording technologies
- 4- AN ALTERNATIVE? The standard "out-of-the-box" SIMULATION TECHNIQUES: MIDI protocol and sound sampling banks; Notation software
- 5- But... "All my students are using music notation programs with rendering software"...
- 6- Let's sum it up: If a software is needed... then a good one should be provided, a software that you can learn with and that we could name the *"best possible substitute for a live orchestra"* ...
- 7- THE CHALLENGE: What can a "best possible substitute for a live orchestra" be... What must it be able to do?
- 8- The TOOLS needed:
 - 1• A reliable, flexible PRODUCTION SYTEM to generate true multi-track files with maximum "realism"
Renderings should be literally indistinguishable from a live orchestra and enable different interpretations with controllable parameters
 - 2• A simple but very efficient multi-track file PLAYER
- 9- The PROPOSAL:
- 10-  ORCHSIM
- 11-  ORCHPLAY

PART-B (Contribution to Research)

DESCRIBING and COMMUNICATING: Developing a TAXONOMY; two angles of approach are being developed:

- 12- from the PERCEPTUAL perspective: **the orchestral EFFECTS** > ORCH.A.R.D. Taxonomy
- 13- from the TRADITIONAL perspective: **the ROLES of instruments** > OrchPlay Taxonomy
orchestral TECHNIQUES

PART-C (Contribution to Research)

- 14-  ORCHSIM within the Orchestration & Perception Project
- 15-  ORCHPLAY within the Orchestration & Perception Project

1- THE STUDY OF ORCHESTRATION AND THE COMPREHENSION OF ITS NATURE AND MECHANISMS

Orchestration is a SKILL to be acquired (the “Art of Orchestration”), it supposes basic knowledge, analysis of reference scores and much practice. In this respect it is not all too different from learning traditional counterpoint or harmony.

THE REFERENCE LIVE ORCHESTRA

Nothing can beat **attending concerts and listening to reference recordings** with score in hand.

Following rehearsals of a good orchestra will enable the listener to discover the full richness and subtlety of orchestration as instrumental families or sections are often rehearsed separately, demonstrating their role in the global texture.

PERFORMING in an orchestra (even a modest one) will also greatly enhance the awareness of the orchestral possibilities as well as its characteristics, dynamics and the typical behaviour of each instrumental family or section.



THE CLASSROOM EXPERIENCE

In a traditional instrumentation and orchestration class an experienced composer/orchestrator will **present and demonstrate the possibilities and idiosyncrasies of the different orchestral families, sections and individual instruments.**

Reference scores and recordings will be studied and the teacher will **perform piano reductions** in order isolate the different instrumental parts, suggesting and demonstrating their roles.



2- TOOLS ONE CAN DREAM OF: An Orchestra in each classroom ?

In the best of all worlds, **one would have unlimited access to a symphonic orchestra in a concert hall** which would be happy to perform any excerpt from the repertoire in one's prescribed instrumental combinations.

"**Dear maestro, could you perform measures 1-8** of the second movement of Haydn's Symphony No. 100; we would like to hear the first flute alone followed by the first violins and then both combined."

 Haydn_Symph100Military_ii(1-70)

NOTE: a CLICK on the icon will start the OrchPlay software. Make sure you have installed your complementary copy and downloaded the multichannel pieces.

Or maybe also: "**We would like to hear measures 59-63** from the first movement of Debussy's *La Mer*; the solo oboe first and then combined with the first flute so we can follow the subtle colouration provided by the flute. We would then like to hear measure 62: first the two clarinets alone and then combined with the two oboes and the two flutes so we can study the timbral octave blend. **Then please measure 63** (clarinets, first basson, third horn, viola and cello) in order to compare this mix of instrumental families with the preceding measure."

 Debussy_La Mer_i(141 mes)



14 6 Cédez un peu

59 60 61 62 63

Fl. 1.2. 1st 1st p < p

Picc. p < p

Ob. 1.2. p < p

E. H. p p

Cl. 1.2. (A,B) p p < > p <

Ban. 1.2. p p < > p <

Ban. 3. p p < > p <

6 Cédez un peu



... Having a symphony orchestra at one's disposal might well remain a mere fantasy... unless a billionaire patron becomes interested in the idea!

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3- THE MORE DOWN-TO-EARTH REALITY: The hopes raised by the new multitrack recording technologies

Could the multitrack recording process allow us to isolate and combine at will specific instruments or families?

Unfortunately this is also more of a daydream...

-Orchestral recording sessions take place in a concert hall to insure musical and acoustical cohesion.

-the array of microphones used (principal, tree, section, ambient, etc.) enable at best to slightly modify the overall balance between instrumental families, while contributing to the specific timbre of the orchestra in the overall room acoustics.

Isolating each musician separately would require them to be separated acoustically in sound-proofed booths in a time-delayed recording process that would render ensemble playing mechanical and even imprecise.

Musicians would be deprived from the possibility of modulating their performance according to musical context and the hall's real acoustics.

Multi-track delayed recording techniques are more suited for pop music as the smaller number of instruments makes it more practicable and even preferable: they allow each individual track to be transformed electronically and mixed in very creative ways.

In comparison: **Symphonic music recordings aim more towards a faithful rendition of the original acoustical performance** by focusing on the richness and combinational variety of the timbres.



In short: Multitrack orchestral recordings are not a possible avenue either ...

In short: Multitrack orchestral recordings are not a possible avenue either ...

... technically, financially (production, rights, etc.)...

4- AN ALTERNATIVE? The standard "out-of-the-box" SIMULATION TECHNIQUES:

MIDI protocol and sound sampling banks; Notation software

SAMPLED acoustical INSTRUMENTS

-For more than two decades a wide range of sampled acoustical instruments of various qualities (midi protocol controlled) have been available.

-The best ones allow a potentially convincing simulation of instrumental performance through a large array of sampled modes of playing and variations with programmed scripts.

-The reality is that even if convincing simulations are possible, **each of these virtual instruments come with its strengths and weaknesses as well as its own limits and erring behaviour.**

-It is not really possible to automate much and the musician needs to have a very clear idea of the result he is aiming for long in advance and then explore which of the different modes and techniques might potentially serve that idea, modifying and reprogramming the virtual instruments as needed.

This amounts to the precise carving of each individual line and balancing it within the orchestral context, a prowess that only a few experienced musicians have.

-Balancing a complete realistic orchestral system is something few individuals or companies have achieved and very few have achieved convincing simulations of the symphonic repertoire.



etc...

MUSIC NOTATION SOFTWARE with "play" capabilities

-Several music notation programs offer diverse **"automated interpretation"** systems from a digitized music score. Despite some commendable efforts, orchestration students or researchers must be warned against those types of simulation. Although useful, **their acoustical rendition of the instrumental world is so far from reality that their pedagogical potential is very limited**, bordering on the counter-productive and amounting to a form of ear "de-training" rather than ear training.



**... Actually, VERY FEW reliable, true-to-life renditions of the symphonic repertoire exist. The amount of work for their realization as well as the musical and technical expertise needed are simply overwhelming...
... and NO MULTITRACK reliable renditions are available...**



Finale Garritan DEMOS: Tchaikovsky Follow link >Finale Garritan soundcloud

 Tchaikovsky_CasseN_Overture(1-40)) OP

 Tchaikovsky_CasseN_f)Mirlitons(77 mes) OP

Tchaikovsky_Sugar Plum Fairy(52 mes) in Sibelius/Noteperformer

 Tchaikovsky_CasseN_b)FeeDragee(52 mes) OP [SUGAR PLUM FAIRY]



NOTE: a CLICK on the icon will start the OrchPlay software. Make sure you have installed your complementary copy and downloaded the multichannel pieces.

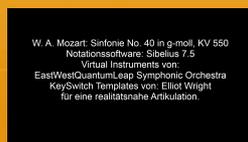
... **Actually, VERY FEW reliable, true-to-life renditions of the symphonic repertoire exist.**
The amount of work for their realization as well as the musical and technical expertise needed are simply overwhelming...

... **and NO MULTITRACK reliable renditions are available...**

Mozart_Symph40K550_i(299 mes) in Sibelius

 Mozart_Symph40K550_i(299 mes) OP

 Mozart_Symph40K550_iii(126 mes) > compare with Harnoncourt... (speed modify, etc.)



 **MoussorgskyOrchRavel_Tableaux_Gnome(57-109): VSL vs. OP**

 MoussorgskyOrchRavel_Tableaux_VecchioCastello(30-52) **VSL vs. OP**

 MoussorgskyOrchRavel_Tableaux_BabaYaga(106-124): **VSL vs. OP**

 **Bruckner_Symph6_ii(113-132)** Compare with reference recording

5- But... “All my students are using music notation programs with rendering software”...

“All my students do it: they use all kind of sound banks in conjunction with notation programs!” -2015 orchestration teacher

-Then...there must be a need for it !

-Where do composition students come from? What do they EXPECT?

-What is nowadays the typical “background” for composition students?

•“I have started with Apple’s Garage Band”

-incoming 2013 composition student

•“I have composed on Laptops and DAWS more than at the piano”

-new 2014 undergrad student

•“I use mainly Cubase with Spitfire sound banks”

-incoming 2015 composition student

•“I use Finale with Garritan instruments to compose and do my orchestration work”

-2016 second-year composition student

•“May I submit my orchestration work in Sibelius with sound files?”

-2016 first-year orchestration student

A composition and orchestration teacher might want to **warn against**

“**relying on automated interpretation**” systems from a digitized music score

for learning and... ear training...

But most young musicians are so used to relying on their laptops...

Then: what about providing them a with more serious learning tool ?

-Are they getting a tool they really can learn with?



... If they want a software... then they should get a good one !



6- Let's sum it up

- Having a live orchestra at disposition is not realistic
 - Multitrack orchestral recordings do not allow isolating or (re-)grouping instruments
- Music Notation software with "Play" capabilities do not produce renderings close enough to the acoustical reality to be used as learning tools
 - Very few reliable -true-to-life- simulations of the symphonic repertoire exist.
 - NO multitrack simulations are available

BUT orchestration students (and even teachers and researchers) are going to use whichever software they can get their hands on anyhow...

If a software is needed... then a good one should be provided, a software that you can learn with and that we could name the "best possible substitute for a live orchestra" ...

7- THE CHALLENGE

What can a **"best possible substitute for a live orchestra"** be and... What must it be able to do?

1- Simply put, a reliable simulation will convey the impression of a live orchestra performing. **It should be literally indistinguishable from the live orchestra.** It should **enable different interpretations.**

Remember the 1970's ad? >>>

2- To be useful for the study of orchestration, a virtual orchestra rendition should be available as **true multi-track** and enable soloing any instrument or selecting any combination of instruments with the control of their relative level in the global mix.

3- True multi-track recordings should be **playable and controlled by a simple software** with massive but lossless compression. And all that on simple, standard machines like laptops.

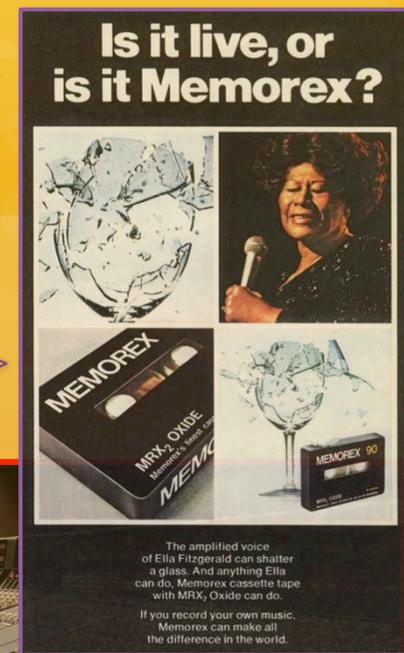
*NO... **NOT** this... >>>*

4- The **repertoire should be representative** of the main historical orchestration approaches focussing first on specific excerpts and developing to full movements or pieces.

5- The repertoire should **be searchable and extensive "tagging" and bookmarking** capabilities should be available.

The multi-track recordings would be made even more useful with:
6- **Scores** available in C and formatted to be printed and used in different versions in the classroom.

7- Several types of **reductions** (Full, Partial, piano transcriptions, etc.) for exercises.



8- The TOOLS needed:

1• A reliable, flexible **PRODUCTION SYTEM** to generate true multi-track files with maximum “realism”

Renderings should be literally indistinguishable from a live orchestra
and **enable different interpretations with controllable parameters**

2• A simple but very efficient **multi-track file PLAYER**

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9- The PROPOSAL:

- 1•  ORCHSIM

- 2•  ORCHPLAY

10- THE ORCHSIM System ·1

OrchSim ties together in a coherent whole some of the best virtual instruments to propose a hyper-realistic rendition of symphonic works. The OrchSim team has developed this system in the last 7 years testing each step regularly with focus groups of listeners (music students at various level, professional musicians as well as sound recording specialists).

A- INTEGRATION, CREATION AND HARMONIZATION OF ALL VIRTUAL INSTRUMENTS, CREATING A LARGE SYMPHONIC ORCHESTRA FROM THE BEST AVAILABLE SAMPLE BANKS

B- ESTABLISHING A LINK BETWEEN VIRTUAL INSTRUMENTS AND SYMBOLIC NOTATION

C- RENDERING OF MUSIC SCORES AND VALIDATION OF RESULTS

D- SOME A/B COMPARISONS

10- THE ORCHSIM System ·2

A- INTEGRATION, CREATION AND HARMONIZATION OF ALL VIRTUAL INSTRUMENTS, CREATING A LARGE SYMPHONIC ORCHESTRA FROM THE BEST AVAILABLE SAMPLE BANKS

a. The first step was to make sure that **every virtual instrument (integrated or created from scratch) "behaves" like the acoustic instrument it is modelled on.** We constructed a comprehensive taxonomy of all modes of playing incorporating their interactions. This involves specific attacks, shaping of the sustained sound and release and -most importantly- the connection between notes and motives, the "phrasing" (types of detaché, legato, portato, etc.)

We "normalized" and "harmonized" a considerable number of individual samples in order to obtain better control of each of their parameters. This also implied the normalization of the different response curves of sample groups (sampled modes of playing) according to tessitura, dynamics and articulation. Each instrument of every instrumental family and section could then have a specific sound palette where all playing modes are balanced and enable very swift and convincing alternations from one to the other as well as complex combinations and variations over time.

b. Relative volumes and dynamic ranges of each virtual instrument were matched to those of the acoustical models.

This enabled the balance of each instrument within its family.

c. All instrumental families were balanced against each other according to the orchestral model, taking into consideration the spatial disposition.

The screenshot displays a DAW interface for a virtual instrument. At the top, the instrument name is '1st_Violins_legato'. Below it, there are several control panels: 'Instrument Options', 'Group Editor', 'Mapping Editor', 'Wave Editor', and 'Sample Loop'. The 'Group Editor' panel shows a list of sample groups with checkboxes for various playing modes like 'Sus-Soft-NormVibr - NOISE', 'Sus-Soft-NormVibr - SOLO', etc. The 'Wave Editor' panel shows a waveform and a piano roll. The 'Sample Loop' panel has a table with columns for 'Loop Start', 'Loop End', and 'X-Fade'. The bottom part of the interface shows 'Group Start Options', 'Group InvertFX', and 'Amplifier' controls. The interface is highly detailed and professional.

Midi Keyboard



DATA FLOW

MacBook Pro



Laptop with 16 GB RAM / SSD hard drive

OR Mac Pro



Kontakt Engine

audio external



Audio System: stereo/multichannel

MIDI Setup



midi

Finale (OrchSim scripted)

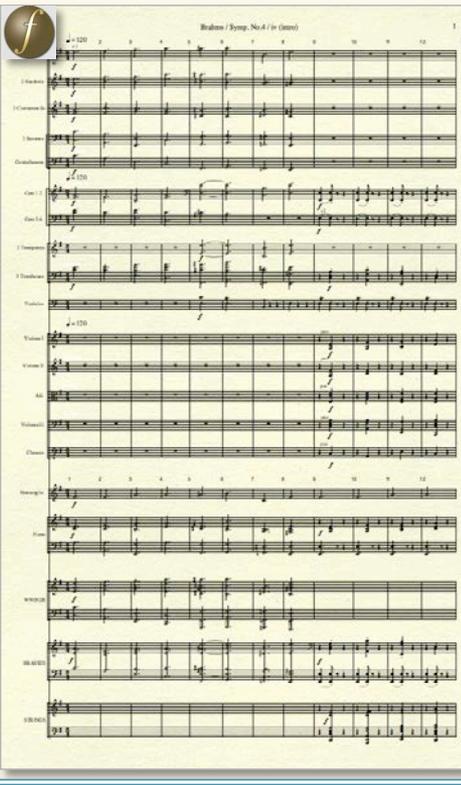


Midi Pipe (OrchSim scripted)

midi



midi



audio internal



Multichannel recording



JackPilot OrchSim routing

JackPilot OrchSim routing

ORCHPLAY AUDIO FILES 65-96

Autio File Name Prefix	Instrument	NAME of stereo files	Replacement Instrument	NAME of stereo files
057	Sex Tenor B0 1	057_SaxT1	Violin 1 solo 10	133_VH1Solo10
058	Sex Tenor B0 2	058_SaxT2	Violin 1 solo 11	134_VH1Solo11
059	Sex Bar Eb 1	059_SaxB1	Violin 1 solo 12	135_VH1Solo12
060	Sex Bass B0 1-2 (L+R) (B2)	060_SaxB2	Violin 1 solo 13	136_VH1Solo13
061	Trumpet 1	061_Tmp1		
062	Trumpet 2	062_Tmp2		
063	Harp 1	063_Hrp1		
064	Harp 2	064_Hrp2		
065	Percussion 1	065_Perc1		
066	Percussion 2	066_Perc2		
067	Percussion 3	067_Perc3		
068	Percussion 4	068_Perc4		
069	Percussion 5	069_Perc5		
070	Percussion 6	070_Perc6		
071	Keyboard 1	071_Kbd1		
072	Keyboard 2	072_Kbd2		
073	Reduction 1	073_Red1		
074	Reduction 2	074_Red2		
075	Click track	075_Click Track		
076	Reduction 3	076_Red3		
077	Violin I Tutti a	077_VI a		
078	Violin I b	078_VI b		
079	Violin I c	079_VI c		
080	Violin I d	080_VI d		
081	Violin I e	081_VI e		
082	Violin II Tutti a	082_VII a		
083	Violin II b	083_VII b		
084	Violin II c	084_VII c		
085	Violin II d	085_VII d		

Jack Config: 276 in / 64 out

LOGIC JACK	LOGIC JACK	KONTAKT 1	KONTAKT 2	KONTAKT 3	KONTAKT 5	KONTAKT 5	KONTAKT 5
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128	129	Channel 1-64					
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424	425	424	425	426			

ORCHPLAYMUSIC

Score indication →

update: 30.06.2017

CONFIGURATION

128 midi channels

128 midi channels

128 midi channels

Maximum number of KONTAKT instances: 5

Maximum number of "live" audio channels: 276 (138 stereo)

Maximum number of dedicated buses: 160 (stereo)

Maximum number of KONTAKT "instrument slots": 320

REPLACEMENTS: 1 (strings soli) 2 (voices) 3 (Orchestral Tools) Others

Instrument name in Kontakt

Program # (Final) MIDiPipe CONVERT prgr. -> CC#24

REPETITION

prgr. 001 (CC#24 KS 000) prgr. 002 (CC#24 KS 001) prgr. 003 prgr. 004 prgr. 005 prgr. 006 prgr. 007

KONTAKT 1 MC PORT A

Woodwinds

Piccolo 1

NOTE for Berlin OT: Panning can only be done in Kontakt

Piccolo 1 (soloist)

Same bus as Picc. 1 (XS); slots 33-35

Flute 1

Same bus as Fl. 1 (XS); slots 36-38

Flute 1 (soloist)

Same bus as Fl. 1 (XS); slots 36-38

Flute 2

Same bus as Fl. 2 (XS); slots 39-41

Flute 2 (soloist)

Same bus as Fl. 2 (XS); slots 39-41

Flute Alto (+bass)

Same bus as Fl. 3 (XS); slots 42-43

Flute Alto (soloist)

Same bus as Fl. 3 (XS); slots 42-43

Oboe 1

Same bus as Ob. 1 (XS); slots 44-45

Oboe 1 (soloist)

Same bus as Ob. 1 (XS); slots 44-45

Oboe 2

Same bus as Ob. 2 (XS); slots 46-48

Oboe 2 (soloist)

Same bus as Ob. 2 (XS); slots 46-48

Oboe 3

Same bus as Ob. 3 (XS); slots 49-50

Oboe 3 (soloist)

Same bus as Ob. 3 (XS); slots 49-50

English Horn 1

Same bus as E.H. 1 (XS); slots 51-53

English Horn 1 (soloist)

Same bus as E.H. 1 (XS); slots 51-53

English Horn 2

Same bus as E.H. 2 (XS); slots 54-56

English Horn 2 (soloist)

Same bus as E.H. 2 (XS); slots 54-56

Clarinet (Eb)

Same bus as Clar Eb (XS); slots 57-58

Clarinet Eb 1 (soloist)

Same bus as Clar Eb (XS); slots 57-58

Clarinet 1 (Bb)

Same bus as Cl. 1 (XS); slots 59-61

Clarinet 1 (soloist)

Same bus as Cl. 1 (XS); slots 59-61

Clarinet 2 (Bb)

Same bus as Cl. 2 (XS); slots 62-64

Clarinet 2 (soloist)

Same bus as Cl. 2 (XS); slots 62-64

Bass Clarinet 1

Same bus as Bass Cl. 1 (XS); slots 65-67

Bass Clarinet (soloist)

Same bus as Bass Cl. 1 (XS); slots 65-67

Bassoon 1

Same bus as Bs. 1 (XS); slots 68-70

Bassoon 1 (soloist)

Same bus as Bs. 1 (XS); slots 68-70

Bassoon 2

Same bus as Bs. 2 (XS); slots 71-73

Bassoon 2 (soloist)

Same bus as Bs. 2 (XS); slots 71-73

Bassoon 3

Same bus as Bs. 3 (XS); slots 74-76

Bassoon 3 (soloist)

Same bus as Bs. 3 (XS); slots 74-76

Contrabassoon 1

Same bus as Cbs. 1 (XS); slots 77-79

Contrabassoon (soloist)

Same bus as Cbs. 1 (XS); slots 77-79

KONTAKT 1 MC PORT B

Woodwinds/Brass extras

Flute 4

Oboe 4

English Horn 2

Clarinet 4 (Bb)

Bass Clarinet 2

Bassoon 4

Contrabassoon 2

Trumpet 4

Trumpet 5

Piano Reduction 4

Bass Trombone 2

Horn 7

Horn 8

Piccolo 2

Flute 3

Clarinet 3 (Bb)

KONTAKT 2 MC PORT C

Brass

Picc. Trumpet

Trumpet 1

Trumpet 2

Trumpet 3

Trombone 1

Trombone 2

Trombone 3

Bass trombone

Tuba 1

Tuba 2

Horn 1

Horn 2

Horn 3

Horn 4

Horn 5

Horn 6

KONTAKT 2 MC PORT D

Percussion, Harps, Keyboards

Percussion 1

Percussion 2

Percussion 3

Percussion 4

Percussion 5

Percussion 6

Timpani 1 (Perc. 7)

Timpani 1 (soloist)

Timpani 2 (Perc. 8) Muted

Timpani 2 (soloist)

Harp 1

Harp 2

Source	PROGRAMS / CC#24 (KS Groups)	(Light-Medium Vib)	(senza Vib)	(Strong Vib)	S (Hidden)	trem. (Strings)	harm.	Xtra	
REPLACEMENTS: 1 (strings soli) 2 (voices) 3 (Orchestral Tools) Others	Instrument name in Kontakt	REPETITION	Or (Hidden) ord. norm., vib norm., con vib senza sord	senza vib.	molto vib. espress. / espressivo	stacc.	biabigliando (Harp) flutter (Brasses)	harmonic	
REPLACEMENTS: 1 (strings soli) 2 (voices) 3 (Orchestral Tools) Others	Program # (Final) MIDiPipe CONVERT prgr. -> CC#24	prgr. 001 (CC#24 KS 000) prgr. 002 (CC#24 KS 001) prgr. 003 prgr. 004 prgr. 005 prgr. 006 prgr. 007	ouvert (Horns) O	près de la table (Harp)	003	004	005	006	
REPLACEMENTS: 1 (strings soli) 2 (voices) 3 (Orchestral Tools) Others	Program # (Final) MIDiPipe CONVERT prgr. -> CC#24	prgr. 001 (CC#24 KS 000) prgr. 002 (CC#24 KS 001) prgr. 003 prgr. 004 prgr. 005 prgr. 006 prgr. 007	ouvert (Horns) O	près de la table (Harp)	003	004	005	006	
XS	Piccolo 1 [Orig XS].nki	Group Cycling prg#4 stacc only		LongNotes prog/Vib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
OT	Piccolo 1 [OT]			Normal Vib.	Senza Vib.	Normal Vib.	Staccato (r8)		Staccatissimo (r8)
XS	Flute 1 [Orig XS].nki	Group Cycling prg#4 stacc only		LongNotes Vib	LongNotes oVib	LongNotes MoltoVib*	ShortNotes	Flutter	Harmonics*
OT	Flute 1 [OT]			Normal Vib.	Senza Vib.	Progressive Vib.	Staccato (r8)		Staccatissimo (r8)
XS	Flute II [+ XS].nki			LongNotes Vib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Alto Flute [VSL].nki	Group Cycling prg#4 stacc only		LongNotes prog/Vib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
XS	Oboe 1 [Orig XS].nki	Group Cycling prg#4 stacc only		LongNotes Vib	LongNotes oVib	LongNotes MoltoVib*	ShortNotes	Flutter	Harmonics*
OT	Oboe 1 [OT]			Normal Vib.	Senza Vib.	Progressive Vib.	Staccato (r8)		Staccatissimo (r8)
XS	Oboe II [+ XS].nki			LongNotes Vib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
XS	Oboe III [- XS].nki			LongNotes Vib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
XS	English Horn [Orig XS].nki			LongNotes Vib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
OT	English Horn 1 [OT]			Normal Vib.	Senza Vib.	Normal Vib.	Staccato (r8)		Staccato (r8)
VSL	Clar Eb [VSL].nki	Group Cycling prg#4 stacc only		LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter*	Harmonic
OT	Clarinet Eb [OT]			Senza Vib.	Senza Vib.	Senza Vib.	Staccato (r8)		Staccato (r8)
XS	Clar Bb I [Orig XS].nki	Group Cycling prg#4 stacc only		LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib*	ShortNotes	Flutter	Harmonics*
OT	Clarinet 1 [OT]			Senza Vib.	Senza Vib.	Senza Vib.	Staccato (r8)		Staccato (r8)
XS	Clar Bb II [+ XS].nki			LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
OT	Clarinet 2 [OT]			Senza Vib.	Senza Vib.	Senza Vib.	Staccato (r8)		Staccato (r8)
XS	Clar Bass [Orig XS].nki	Group Cycling prg#4 stacc only		LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
OT	Bass Clarinet [OT]			Senza Vib.	Senza Vib.	Senza Vib.	Staccato (r8)		Staccatissimo (r8)
XS	Bassoon 1 [Orig XS].nki	Group Cycling prg#4 stacc only		LongNotes Vib	LongNotes oVib	LongNotes MoltoVib*	ShortNotes	Flutter*	Harmonic
OT	Bassoon 1 [OT]			Normal Vib.	Senza Vib.	Normal Vib.	Staccato (r8)		Staccatissimo (r8)
XS	Bassoon II [+ XS].nki			LongNotes Vib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
XS	Bassoon III [- XS].nki			LongNotes Vib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
XS	CBassoon [Orig XS].nki	Group Cycling prg#4 stacc only		LongNotes Vib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter*	Harmonic
OT	Contrabassoon [OT]			Normal Vib.	Senza Vib.	Normal Vib.	Staccato (r8)		Staccato (r8)
XS	Flute I [Orig XS].nki			LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
XS	Oboe I [Orig XS].nki			LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
XS	English Horn II [+ XS].nki			LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
XS	Clar Bb I [Orig XS].nki			LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
XS	Clar Bass [- XS].nki			LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
XS	Bassoon I [Orig XS].nki			LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
XS	CBassoon [+ XS].nki			LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Trumpet in C I [Orig VSL].nki			LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Trumpet in C II [+ VSL].nki			LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	N / The Grandeur	Trumpet in C III [- VSL].nki		LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Bass Trombone [+ VSL].nki			LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns III [- VSL].nki			LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns IV [- VSL].nki			LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
XS	Piccolo II [- XS].nki			LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
XS	Flute III [- XS].nki			LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
XS	Clar Bb III [- XS].nki			LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Trumpet Picc [VSL].nki	Group Cycling prg 4-25-26-30-34	(Timbral Vol Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Trumpet in C I [Orig VSL].nki	Group Cycling prg 1-2-3-4-25-26	(Timbral Vol Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Trumpet in C II [+ VSL].nki		(Timbral Vol Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Trumpet in C III [- VSL].nki		(Timbral Vol Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Tenor Trombone I [Orig VSL].nki	Group Cycling prg 1-3-4-25-26	(Timbral Vol Xtade CC-22)	LongNotes prog/Vib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Tenor Trombone II [+ VSL].nki		(Timbral Vol Xtade CC-22)	LongNotes prog/Vib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Tenor Trombone III [- VSL].nki		(Timbral Vol Xtade CC-22)	LongNotes prog/Vib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Bass Trombone [Orig VSL].nki	Group Cycling prg 4- [to do: 25]	(Timbral Vol Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Tuba I [Orig VSL].nki	Group Cycling prg 4- [to do: 25]	(Timbral Vol Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Tuba II [+ VSL].nki		(Timbral Vol Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns I [Orig VSL].nki	Group Cycling prg 4- [to do: 25]	(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns II [+ VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns III [- VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns IV [+ VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns I [Orig VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns II [+ VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns III [- VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns IV [+ VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns I [Orig VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns II [+ VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns III [- VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns IV [+ VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns I [Orig VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns II [+ VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns III [- VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns IV [+ VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns I [Orig VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns II [+ VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns III [- VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns IV [+ VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns I [Orig VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns II [+ VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns III [- VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns IV [+ VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns I [Orig VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns II [+ VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns III [- VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns IV [+ VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns I [Orig VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns II [+ VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns III [- VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns IV [+ VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns I [Orig VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns II [+ VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns III [- VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns IV [+ VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns I [Orig VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter	Harmonics*
VSL	Horns II [+ VSL].nki		(Timbral Xtade CC-22)	LongNotes LightVib	LongNotes oVib				

Score indication

update: 30.06.2017

CONFIGURATION

128 midi channels

global local Vol Instrument name in Finale



KONTAKT 3 MC PORT A

MidiPipe OrchSim in K2A STRINGS

(div 5-5-5-5-4) (5-4-6-6-6 soli)

Table with columns for measure number, staff number, dynamics, and instrument name. Includes sections for Violins I, II, III, IV and Viola.

Header table with columns for performance techniques: (Light-Medium Vib), (senza Vib), (Strong Vib), S (hidden), trem. (Strings), harm., spicc. (Strings), crescendi, and others.

KONTAKT 3 MC PORT B

MidiPipe OrchSim in K2B STRINGS+

Double bass b, c, d

Table with columns for measure number, staff number, dynamics, and instrument name. Includes sections for Cello and Double Bass.

Kontakt 5 Port B > Kontakt 5 Port B >

KONTAKT 5 MC PORT B

Solo STRINGS HZ

Violin I Solo, Violin II Solo, Viola Solo, Cello Solo, Double Bass Solo

Table with columns for measure number, staff number, dynamics, and instrument name. Includes sections for C-H Violin I Solo, C-H Violin II Solo, C-H Vla Solo, C-H Vc Solo, C-H Vc Solo 2, C-H Db Solo.

KONTAKT 5 MC PORT C

MidiPipe OrchSim in K2C STRINGS+

Violin II Solo, Viola Solo, Cello Solo, Double Bass Solo

Table with columns for measure number, staff number, dynamics, and instrument name. Includes sections for Strings III soli extras.

KONTAKT 1 MC PORT A

Woodwinds

MidiPipe
OrchSim in K1A



WWINDS
(7-6-7-6)

KONTAKT 1 MC PORT B

Woodwinds/Brass extras

MidiPipe
OrchSim in K1B



WWINDS+

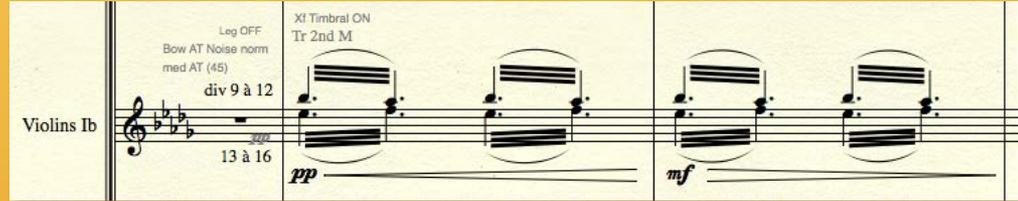
BRASSES+

1	1	-4.9	Piccolo 1	Piccolo 1 [Orig XS].nki	Group Cycling prg#4 stacc only	LongNotes progrVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter
			<i>Piccolo 1</i>	Piccolo 1 [OT]		Normal Vib.	Senza Vib.	Normal Vib.	Staccato (rr8)	
2	2	-6.9	Flute 1	Flute I [Orig XS].nki	Group Cycling prg#4 stacc only	LongNotes Vib	LongNotes oVib	LongNotes MoltoVib*	ShortNotes	Flutter
2	2		<i>Flute 1</i>	Flute 1 [OT]		Normal Vib.	Senza Vib.	Progressive Vib.	Staccato (rr8)	
3	3	-6.9	Flute 2	Flute II [+ XS].nki						
4	4	-9.5	Flute Alto (+bass)	Alto Flute [VSL].nki	Group Cycling prg#4 stacc only	LongNotes progrVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter
5	5	-6.9	Oboe 1	Oboe I [Orig XS].nki	Group Cycling prg#4 stacc only	LongNotes Vib	LongNotes oVib	LongNotes MoltoVib*	ShortNotes	Flutter
5	5		<i>Oboe 1</i>	Oboe 1 [OT]		Normal Vib.	Senza Vib.	Progressive Vib.	Staccato (rr8)	
6	6	-6.9	Oboe 2	Oboe II [+ XS].nki						
7	7	-6.9	Oboe 3	Oboe III [- XS].nki						
8	8	-9.6	English Horn 1	English Horn [Orig XS].nki		LongNotes Vib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter
8	8		<i>English Horn 1</i>	English Horn 1 [OT]		Normal Vib.	Senza Vib.	Normal Vib.	Staccato (rr8)	
9	9	-9.2	Clarinet (Eb)	Clar Eb [VSL].nki	Group Cycling prg#4 stacc only	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter*
9	9		<i>Clarinet (Eb)</i>	Clarinet Eb [OT]		Senza Vib.	Senza Vib.	Senza Vib.	Staccato (rr8)	
10	10	-6.4	Clarinet 1 (Bb)	Clar Bb I [Orig XS].nki	Group Cycling prg#4 stacc only	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib*	ShortNotes	Flutter
10	10		<i>Clarinet 1 (Bb)</i>	Clarinet 1 [OT]		Senza Vib.	Senza Vib.	Senza Vib.	Staccato (rr8)	
11	11	-6.4	Clarinet 2 (Bb)	Clar Bb II [+ XS].nki						
11	11		<i>Clarinet 2 (Bb)</i>	Clarinet 2 [OT]		Senza Vib.	Senza Vib.	Senza Vib.	Staccato (rr8)	
12	12	-9.2	Bass Clarinet 1	Clar Bass [Orig XS].nki	Group Cycling prg#4 stacc only	LongNotes LightVib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter
12	12		<i>Bass Clarinet</i>	Bass Clarinet [OT]		Senza Vib.	Senza Vib.	Senza Vib.	Staccato (rr8)	
13	13	-9.9	Bassoon 1	Bassoon I [Orig XS].nki	Group Cycling prg#4 stacc only	LongNotes Vib	LongNotes oVib	LongNotes MoltoVib*	ShortNotes	Flutter*
13	13		<i>Bassoon 1</i>	Bassoon 1 [OT]		Normal Vib.	Senza Vib.	Normal Vib.	Staccato (rr8)	
14	14	-9.9	Bassoon 2	Bassoon II [+ XS].nki				(LongNotes Vib (L))		
15	15	-9.9	Bassoon 3	Bassoon III [- XS].nki						
16	16	-9.6	Contrabassoon 1	CBassoon [Orig XS].nki	Group Cycling prg#4 stacc only	LongNotes Vib	LongNotes oVib	LongNotes MoltoVib	ShortNotes	Flutter*
16	16		<i>Contrabassoon</i>	Contrabassoon [OT]		Normal Vib.	Senza Vib.	Normal Vib.	Staccato (rr8)	
17	1	-6.9	Flute 4	Flute I [Orig XS].nki						
18	2	-6.9	Oboe 4	Oboe I [Orig XS].nki						
19	3	-9.6	English Horn 2	English Horn II [+ XS].nki						
20	4	-6.4	Clarinet 4 (Bb)	Clar Bb I [Orig XS].nki						
21	5	-9.2	Bass Clarinet 2	Clar Bass [- XS].nki						
22	6	-10.1	Bassoon 4	Bassoon I [Orig XS].nki						
23	7	-9.6	Contrabassoon 2	CBassoon [+ XS].nki						
24	8	-2.5	Trumpet 4	Trumpet in C I [Orig VSL].nki						
25	9	-2.5	Trumpet 5	Trumpet in C II [+ VSL].nki						
26	10	-2.5	Piano Reduction 4	Nl / The Grandeur	Trumpet in C III [- VSL].nki					
27	11	3.2	Bass Trombone 2	Bass Trombone [+ VSL].nki						

10- THE ORCHSIM System .3

d. Relying on the structure and possibilities of the MIDI transmission protocol as well as the structure of our sample engine, we prepared a **global mapping of all modes of playing and their variations** for all instruments in order to enable their control in real time with minimal latency to ensure a very realistic orchestral rendering. Many basic "instrumental behaviours" were then scripted into primary routines accessible via meta-tools.

 Debussy LaMer_1 (41-42) VI Ib



WHAT can be controlled and HOW ?

• **Note assigned Articulations:**

any symbol that will affect one specific note

-Ex: $\vee \cdot _ \cdot > \gtrsim \geq \lesssim \wedge \vee \wedge \nabla \text{ sfp } \{$, etc.

• **Staff assigned Expressions:**

•any symbol that will affect the part until cancelled or replaced by a new one

-Ex: *pp mf ff* $\text{♩} = 60$, etc.

•**Modes of playing (instr. specific)**, Ex: ord, senza vib, molto vib, espress, con sord, spicc, sul tasto,

col legno, flautendo, sul pont, pizz,    

$\diamond \circ \circ + \diamond \phi \oplus \blacklozenge$, leg, Port FAST, MED, fast AT, Bow AT noise, Bow press, Knoise, Air, etc.

             , etc.

• **Continuous Controlers (CC #1-127):** will affect the part over time

-Ex: Vol, Timbre, Pitch, Attack, timbral Xfade, Vib with, Vib speed, Leg bend, Leg time, Sord $\circ +$, etc.

• **Note onset, offset, Velocity**



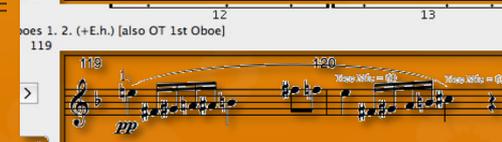

 Bruckner_Symph6_ii(119-120) Clar.1



1. 2. (Bb) [also OT 1st Clarinet]



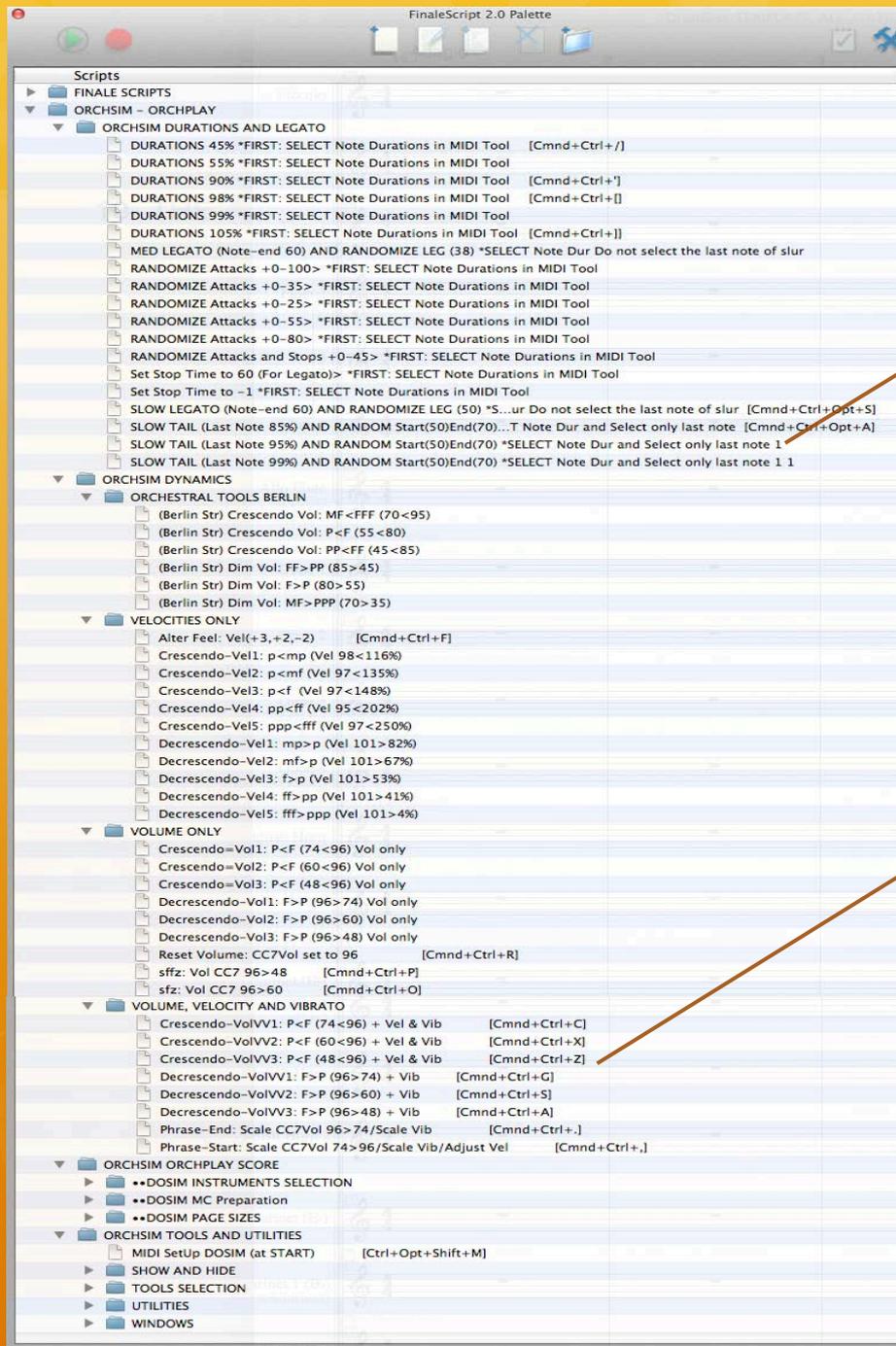

1. 2. (+E.h.) [also OT 1st Oboe]



• **Tempo variations. Inflexions**, etc.

10- THE ORCHSIM System 4

(EX: Macro scripts)



EXAMPLES:

Midi Tool
 menu item "Set To..."
 Type "26"
 return
 menu item "Percent Alter..."
 Type "95%"
 return
 menu item "Randomize..."
 Type "25"
 tab
 Type "35"
 return
 Midi Tool

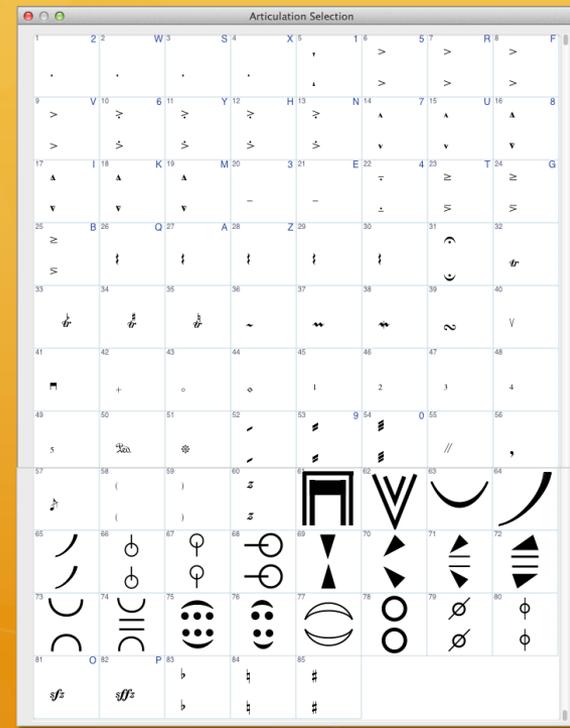
Midi Tool
 menu item "Continuous Data..."
 type 7
 press "ok"
 menu item "Scale..."
 type 48
 tab
 type 96
 click radio "absolute"
 press "ok"
 menu item "Continuous Data..."
 type 20
 press "ok"
 menu item "Scale..."
 type 32
 tab
 type 127
 click radio "absolute"
 press "ok"
 menu item "Key Velocities"
 menu item "Scale..."
 type 180
 tab
 type 190
 click radio "percent of original"
 press "ok"
 menu item "Continuous Data..."
 type 7
 press "ok"

10- THE ORCHSIM System •5 (Ex: general Articulations = single notes)

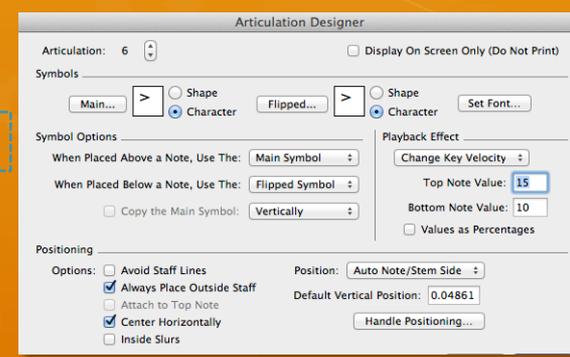
Articulations (all instruments)	#	Finale Articulations* (*all articulations also available as "hidden" markings)	Meta Tool	Attack - earlier + later bottom/top note	Duration (%)	Velocity (midi values) top/bottom	Articulations (all instruments)	#	Finale Articulations* (*all articulations also available as "hidden" markings)	Meta Tool	Attack - earlier + later bottom/top note	Duration (%)	Velocity (midi values) top/bottom
Staccato	1	.	2		65%		Breath Mark	56	☹	graphic	graphic	graphic	
*	2	.	W		97%		Appoggiatura	57	♪	graphic	graphic	graphic	
*	3	.	S		75%			58	(graphic	graphic	graphic	
*	4	.	X		40%			59)	graphic	graphic	graphic	
Staccatissimo	5	.	I		42%		Flutter	60	☹	graphic	graphic	graphic	
Accent	6	V	5			+15/+10	Heavy Pressure Downbow	61	☹	graphic	graphic	graphic	
*	7	V	R			+10/+7	Heavy Pressure Upbow	62	☹	graphic	graphic	graphic	
*	8	V	F			+5/+3		63	> see palette next page	graphic	graphic	graphic	
*	9	V	V			+1/+0		64	> see palette next page	graphic	graphic	graphic	
Accent Staccato	10	V	6		69%	+15/+10		65	> see palette next page	graphic	graphic	graphic	
*	11	V	Y		97%	+15/+10	Bartok Pizz.	66	☹	graphic	graphic	graphic	
*	12	V	H		75%	+15/+10		67	> see palette next page	graphic	graphic	graphic	
*	13	V	N		40%	+15/+10		68	> see palette next page	graphic	graphic	graphic	
Marcato (heavy accent)	14	▲	7			+21/+16		69	> see palette next page	graphic	graphic	graphic	
*	15	▲	U			+18/+12		70	> see palette next page	graphic	graphic	graphic	
Marcato Staccato	16	▲	8		69%	+21/+16		71	> see palette next page	graphic	graphic	graphic	
*	17	▲	I		97%	+21/+16		72	> see palette next page	graphic	graphic	graphic	
*	18	▲	K		75%	+21/+16		73	> see palette next page	graphic	graphic	graphic	
*	19	▲	M		40%	+21/+16		74	> see palette next page	graphic	graphic	graphic	
Tenuto	20		3		104%			75	> see palette next page	graphic	graphic	graphic	
*	21		E		97%	+6/+4		76	> see palette next page	graphic	graphic	graphic	
Tenuto short	22		4		72%	+6/+4		77	> see palette next page	graphic	graphic	graphic	
Tenuto Accent	23		T		104%	+15/+10		78	> see palette next page	graphic	graphic	graphic	
*	24		G		100%	+15/+10		79	> see palette next page	graphic	graphic	graphic	
*	25		B		80%	+15/+10		80	> see palette next page	graphic	graphic	graphic	
Arpeggiando	26	⤴	Q	-73/0				81	ffz	Script [Cmd+Ctrl+O]	138/132 %		
*	27	⤴	A	0/+73				82	ffz	Script [Cmd+Ctrl+P]	190/182 %		
*	28	⤴	Z	-160/0						Slorzando			
*	29	⤴		-43/0						(ffz rest as Expression OR Script Cmd+Ctrl + B)			
*	30	⤴		-200/0									
Fermata	31	⌒			graphic	graphic							
Trill	32	tr			graphic	graphic							
*	33	tr			graphic	graphic							
*	34	tr			graphic	graphic							
*	35	tr			graphic	graphic							
Mordent	36	⤴			graphic	graphic							
*	37	⤴			grayed notes in Second Voice /Human Playb								
Turn	38	tr			grayed notes in Second Voice /Human Playb								
Upbow	39	☹			grayed notes in Second Voice /Human Playb								
Downbow	40	☹			graphic	graphic							
Closed	41	☹			graphic	graphic							
Open	42	+			graphic	graphic							
*	43	o			graphic	graphic							
*	44	o			graphic	graphic							
*	45	1			graphic	graphic							
*	46	2			graphic	graphic							
*	47	3			graphic	graphic							
*	48	4			graphic	graphic							
Sustain Pedal depressed	49	5			graphic	graphic							
Sustain Pedal released	50	☹			graphic	graphic							
Tremolo	51	☹			graphic	graphic							
*	52	☹			graphic	graphic							
*	53	☹			graphic	graphic							
Cut Sound	54	☹			graphic	graphic							
*	55	☹			graphic	graphic							

OrchSim Articulations for Finale

Finale Articulations in ARTICULATION TOOL



Script EXAMPLE:



10- THE ORCHSIM System •6 (Ex: general Expressions = staff position until change)

OrchSim General Expressions for Finale

Finale Expressions in EXPRESSION TOOL (all instruments)



- Dynamics**
midi value
- pppp* 20
 - ppp* 33
 - pp* 49
 - p* 59
 - mp* 70
 - mf* 79
 - f* 88
 - ff* 101
 - fff* 118
 - ffff* 127

Expression Selection

732	1378	3	1	
-PLAYBACK >				
491		8	864	<i>fff</i>
520		7	436	<i>sempre fff</i>
521		6	863	<i>sempre f</i>
490		5	500	<i>sempre mf</i>
449		4	435	<i>sempre mp</i>
471		3	402	<i>sempre p</i>
18	466	9	2	<i>subito p</i>
868	465	10	1	<i>ppp</i>
869	444	11	871	<i>pppp</i>
872	441	431	873	<i>pppp</i>
833	998	999	1000	<i>pppp</i>
-GRAPHIC >				
889	470	890	485	<i>sub</i>
709	13	14	15	<i>sempre (possibile) fff</i>
708	710	472	476	<i>sf</i>
522	448	447	534	<i>f</i>
23	34	25	26	<i>pp</i>
733	734	27	28	<i>cresc. molto</i>
1001	1002	1003	1004	<i>dim. ...</i>
818	820	982	1387	<i>sfz</i>

Finale Expressions in EXPRESSION TOOL (all instruments)



Tempi

Expression Selection

843	37	38	39	
-PLAYBACK >				
749	41	42	855	<i>Moderato</i> (♩ = c. 108)
888	748	747	889	<i>Allegro</i> (♩ = 40)
573	887	754	844	<i>Allegro</i> (M.M. ♩ = c. 120)
882	520	744	746	<i>Moderato</i> (♩ = 60)
759	883	741	760	<i>Moderato</i> (♩ = 40)
143	890	851	852	<i>Moderato</i> (♩ = 80)
885	884	743	858	<i>Moderato</i> (♩ = 92)
752	886	750	868	<i>Moderato</i> (♩ = 120)
753	887	751	869	<i>Moderato</i> (♩ = 144)
1015	1016	1017	1018	<i>Moderato</i> (♩ = 40)
-GRAPHIC >				
842	574	488	220	<i>Adagio</i> (♩ = 40)
218	43	44	885	<i>Allegro</i> (♩ = 112)
908	949	950		<i>Moderato</i> (♩ = 112)

Script EXAMPLE:

Expression Designer

Description: Bow AT Noise Off (Cnr.19=0) (Legato must be Off) (Berlin Strings)

Text: Bow AT Noise Off

Use Orchestral Tools Category Fonts

Font: Helvetica 9 Fixed Size

Enclosure Shape: None

Type: Controller 19 19: General 4

Effect: Set to Value 0

Execute Shape

Play Only on Pass

Finale Expressions in EXPRESSION TOOL (all instruments)



Cents deviations (Concrescence)

Expression Selection

1420	1416	1417	1418	
+ 4 cents				
1419	1421	1422	1423	
- 4 cents				
1397	1391	1392	1393	
+ 15 cents				
1406	1394	1395	1396	
+ 33 cents				
1398	1403	1404	1405	
- 33 cents				
1407	1408	1409	1410	
+ 50 cents				
1412	1411	1413	1430	
- 50 cents				
1414	1415	1431		
tempo				

Finale Expressions in EXPRESSION TOOL (all instruments)



1/4 Tones -Pitch-Vib

Expression Selection

903	160	519	1276	
-PLAYBACK >				
154	159	156	1277	
155	1278	153	1279	
157	1280	158	1281	
526	507	434	1282	
503	504	502	1275	
1027	1028	1029	1283	
-Just intonation>				
1059	1044	1058	1034	
1057	1045	1056	1041	
1055	1042	1054	1046	
1053	1047	1052	1048	
1051	1049	1050	1035	
1058	1037	1058	1039	

Expression Selection

621	192	883	474	
-XtremVibrato>				
620	1513	1320	1321	
norm vib				
619	1515	947	1316	
Xtrem LONG notes				
191	1311	1319	1318	
Xtrem MID notes				
45	969	960	1030	
Xtrem SHORT notes				
18	19	31	20	
loco				
22	23	1023	1031	
Bbassa midi				
1032	1024	1025	1026	
loco.midi				
1003	79	80	81	
-GRAPHIC >				
82	83	84	85	
gliss.				
86	87	88	89	
fast fall				
90	91	94	988	
norm.				

10- THE ORCHSIM System ·7 (Instrument Modes of playing = Ex: STRINGS)

STRINGS Playing Techniques

Playing Techniques Kontakt	Finale Expressions* <small>(*all expressions also available as "hidden" markings)</small>	Meta Tool	Violins I Tutti +div b-c-d-e	Violins II Tutti +div b-c-d-e	Solo Violins	Violas Tutti +div b-c-d-e	Solo Violas	Violoncellos Tutti +div b-c-d-e	Solo Violoncellos	Double Basses Tutti +div b-c-d	Solo Double Basses
STRINGS GENERAL											
Volume change	<i>(always ON)</i> draw CC:7 in midi tool		X	X	X	X	X	X	X	X	X
Legato (for slurred notes)	Leg ON/OFF <i>(hidden)</i>	Q/W	X	X	X	X	X	X	X	X	X
Portato amount variable: fast>slow	Port 0 (0) > FAST (40) > MED (85) > SLOW (127) <i>(hidden)</i>	R/E	X	X	X	X	X	X	X	X	X
Vibrato amount variable: senza>molto	XI Vib. ON/OFF senza (0) > molto (127) <i>(hidden)</i> draw CC:20 in midi tool	T/Y	X	X	X	X	X	X	X	X	X
Vibrato norm. (default playing technique) [LongNotes Vib]	Or <i>(hidden)</i> ordinario / ord. norm. vib norm. con vib senza sord (arco)	A	X	X	X	X	X	X	X	X (senza vib)	X
Senza vib. [LongNotes oVib]	senza vib.	X	X	X	X	X	X	X	X	X	X
Espressivo [LongNotes mVib]	express. molto vib.	C	X	X	X (vib. norm.)	X	X (vib. norm.)	X	X (vib. norm.)	X (senza vib)	X (vib. norm.)
Staccato	S <i>(hidden)</i> stacc.	S	X	X	X	X	X	X	X	X	X
Storzando	Scripts [Cmd+Ctrl+O/P] sfz: sfz (articulation), sfz reset		X	X	X	X	X	X	X	X	X
Tremolo	♯	N	X	X	X	X	X	X	X	X	X
Harmonics	harm. ○	M	X	X	X	X	X	X	X	X	X
Trills min. 2nd	Tr 2nd m <i>(hidden)</i>		X	X	<i>(upcoming)</i>	X	<i>(upcoming)</i>	X	<i>(upcoming)</i>	X	<i>(upcoming)</i>
Trills Maj. 2nd	Tr 2nd M <i>(hidden)</i>		X	X	<i>(upcoming)</i>	X	<i>(upcoming)</i>	X	<i>(upcoming)</i>	X	<i>(upcoming)</i>
Trills min. 3rd	Tr 3rd m <i>(hidden)</i>		X	X	<i>(upcoming)</i>						
Trills Maj. 3rd	Tr 3rd M <i>(hidden)</i>		X	X	<i>(upcoming)</i>						
Strings Specific											
Velocity group crossfades	<i>(automatic)</i> fast AT(0) > fast(3) > norm(25) > norm (30) > med(45) > slow(60) > very slow(80) > Xtrem slow(120) <i>(hidden)</i>	H/J K/L	X	X	X	X	X	X	X	X	X
BOW attack/SPEED control variable: fast>slow	XI AT noise ON/OFF draw CC:20 in midi tool										
BOW attack/NOISE control variable: light>heavy	Bow AT noise OFF(0) > Bow AT Noise very light(50) > Bow AT Noise light(62) > Bow AT Noise norm(75) > Bow AT Noise heavy(88) > Bow AT Noise very heavy(97) <i>(hidden)</i>	9/0	X	X	X	X	X	X	X	X	X
BOW POSITION control variable: tasto>ponticello	XI Bow pos. ON/OFF draw CC:20 in midi tool		X	X	<i>(upcoming)</i>	X	<i>(upcoming)</i>	X	<i>(upcoming)</i>	X	<i>(upcoming)</i>
BOW PRESSURE control variable: flautando>heavy scratch	XI Bow press. ON/OFF draw CC:20 in midi tool		X	X	<i>(upcoming)</i>	X	<i>(upcoming)</i>	X	<i>(upcoming)</i>	X	<i>(upcoming)</i>
Spiccato	spicc.	V	X (staccato)	X (staccato)	X	X (staccato)	X	X (staccato)	X	X (staccato)	X
Sul ponticello	sul pont.	G	X	X	X	X	X	X	X	X	X
Trem. sul pont.	♯		X	X	X	X	X	X	X	X	X
Sul tasto	sul tasto	F	X	X	X	X	X	X	X	X	X
Trem. sul tasto <i>(upcoming)</i>											
Flautando	flautando		X	X	X	X	X	X	X	X	X
con sordino	con sord.	B	X	X	X	X	X	X	X	X	X
Con sord. trem.	♯		X	X	X	X	X	X	X	X	X

Playing Techniques Kontakt	Finale Expressions* <small>(*all expressions also available as "hidden" markings)</small>	Violins I Tutti +div b-c-d-e	Violins II Tutti +div b-c-d-e	Solo Violins	Violas Tutti +div b-c-d-e	Solo Violas	Violoncellos Tutti +div b-c-d-e	Solo Violoncellos	Double Basses Tutti +div b-c-d	Solo Double Basses
STRINGS										
Pizzicato	pizz.	D	X	X	X	X	X	X	X	X
Con sord. pizz.	pizz.		X	X	X	X	X	X	X	X
Bartok pizz.	Bartok pizz. Ⓞ		X	X	X	X	X	X	X	X
Lhand pizz.	Lhand pizz.					X	X	X	X	X
Dead pizz. [V_Dead Pizz]	dead pizz.					X	X	X	X	X
Col legno	col legno		X	X	X	X	X	X	X	X
Col legno tram. <i>(upcoming)</i>										
White noise	white noise bruit blanc bow on body		X	X	X	X	X	X	X	X
Heavy pressure [Scratch #]	extreme pressure "scratch" heavy pressure		X	X	X	X	X	X	X	X
Knocks	knock on wood					X	X	X	X	X
Bow on bridge [Bow/Bridge #]	bow on the bridge					X	X	X	X	X
Tail piece bow	tailpiece bow					X	X	X	X	X
Spike bow [Vc_Bow_Spike]	cello spike bow							X		
Percussive Bow [Dv+Bow_Perc]	Dhass perc-bow									X
Channels 122+90	2 VI. Soli (VI.I=VI.1+VI.2)					X				
Channels 122+90+91	3 VI. Soli (VI.I=VI.1+VI.2+VI.3)					X				
Channels 123+92+93	2 VI. Soli (VI.II=VI.1+VI.2)					X				
Channels 123+92	3 VI. Soli (VI.II=VI.1+VI.2+VI.3)					X				
Channels 124+125	2 Vla. Soli (Vla.1+Vla.2)						X			
Channels 124+125+94	3 Vla. Soli (Vla.1+Vla.2+Vla.3)						X			
Channels 126+127	2 Vc. Soli (Vc.1+Vc.2)							X		
Channels 126+127+95	3 Vc. Soli (Vc.1+Vc.2+Vc.3)							X		
Channels 128+96	2 Cb. Soli (Cb.1+Cb.2)								X	
Channels 128+96+88	3 Cb. Soli (Cb.1+Cb.2+Cb.3)									X
RETURN to 1.Solo	1. Solo / 1.									X

Playing Technique Change

Special Feature

Available

Functional but replaced by (...)

Expression Selection

Main Tool Palette

Finale EXPRESSION TOOL STRINGS

GENERAL

STRINGS

10- THE ORCHSIM System -9 (Instrument Modes of playing = Ex: WOODWINDS)

WOODWINDS Playing Techniques

Playing Techniques Kontakt	Finale Expressions* [*all expressions also available as "hidden" markings]	Meta Tool	Piccolos 1,2	Flutes 1,2,3,4	Alto Flute	Oboe 1,2,3,4	English Horns 1,2	E♭ Clarinet	B♭ Clarinet 1,2,3,4	Bass Clarinets 1,2	Bassoons 1,2,3,4	Contrabassoons 1,2
WOODWINDS												
GENERAL												
Volume change	(always ON) draw CC:7 in midi tool		X	X	X	X	X	X	X	X	X	X
Legato (for slurred notes)	Leg ON/OFF (hidden)	Q/W	X	X	X	X	X	X	X	X	X	X
Portato amount variable: fast>slow	Part 0 (0) > FAST (40) > MED (85) > SLOW (127) (hidden) X1 Vib. ON/OFF	R/E	X	X	X	X	X	X	X	X	X	X
Vibrato amount variable: senza>molto	senza (0) > molto (127) (hidden) draw CC:20 in midi tool	T/Y		X	X	X					X	X
Vibrato norm. (default playing technique) (longNotes Vib)	Or (hidden) ordinario / ord. norm. vib norm. con vib senza sord	A	X (senza vib.)	X	X	X	X	X (senza vib)	X (senza vib)	X (senza vib)	X	X
Senza vib. (longNotes aVib)	senza vib.	X	X	X	X	X	X (vib. norm.)	X	X	X	X	X
Espressivo (longNotes mVib)	espress. molto vib. S (hidden)	C	X (senza vib.)	X	X (vib. norm.)	X	X (vib. norm.)	X (senza vib)	X	X (senza vib)	X	X (vib. norm.)
Staccato	stacc.	S	X	X	X	X	X	X	X	X	X	X
Sforzando	Scripts [Cmd+Ctrl+O/P] sfz /sfz (articulation) / sfz reset		X	X	X	X	X	X	X	X	X	X
Flatterzunge	flutter z	N	X	X	X	X	X	X		X	X	X
Harmonics	harm. °	M	X	X	X	X	X		X	X		
Trills min. 2nd	Tr 2nd M (hidden)		X	X	X	X	X	/upcoming/	X	X	X	/upcoming/
Trills Maj. 2nd	Tr 2nd M (hidden)		X	X	X	X	X	/upcoming/	X	X	X	/upcoming/
Trills min. 3rd	Tr 3rd M (hidden)		X	X		X			X			
Trills Maj. 3rd	Tr 3rd M (hidden)		X	X		X			X			
WoodWinds Specific												
Adjustable key noise volume variable: faint>prominent	Kn OFF > Kn Norm > Kn Heavy (hidden)		X	X	X	X	X	X	X	X	X	X
Adjustable air noise volume variable: faint>prominent	Bn OFF > Bn Norm > Bn Heavy (hidden)		/upcoming/	/upcoming/	/upcoming/	/upcoming/	/upcoming/	/upcoming/	/upcoming/	/upcoming/	/upcoming/	/upcoming/
Multiphonics	M1		X	X		X	X		X	X	X	X
Multiphonics (2)	M2		X	X								
Tongue Ram	tongue ram		X	X								
Key Clicks	key clicks		X	X		X	X		X	X	X	X
Air Noise	air noise		X	X		X	X		X	X	X	X
Blow Noise	air+pitch blow noise (pitched)		X	X								
Slap Tongue / Slap	slap tongue		X	X					X	X	X	X
Whistle Tone	whistle tones		X	X								

Playing Techniques Kontakt	Finale Expressions* [*all expressions also available as "hidden" markings]	Piccolos 1,2	Flutes 1,2,3,4	Alto Flute	Oboe 1,2,3,4	English Horns 1,2	E♭ Clarinet	B♭ Clarinet 1,2,3,4	Bass Clarinets 1,2	Bassoons 1,2,3,4	Contrabassoons 1,2
WOODWINDS											
Doublings											
Fl.1 to picc.1 (ch.1)	Piccolo 1 (Fl.1)		X (Fl.1)								
Fl.1 to alto (ch.4)	Alto (Fl.1)		X (Fl.1)								
Fl.1 RETURNs to Fl.1 (ch.2)	Flute (Fl.1)		X (Fl.1)								
Fl.2 to picc. (ch.30)	Piccolo 2 (Fl.2)		X (Fl.2)								
Fl.2 RETURNs to Fl.2 (ch.3)	Flute (Fl.2)		X (Fl.2)								
Fl.2 to picc.1 (ch.1)	Piccolo 1 (Fl.2)		X (Fl.2)								
Fl.2 RETURNs to Fl.2 (ch.3)	Flute (Fl.2)		X (Fl.2)								
Fl.3 to picc.2 (ch.30)	Piccolo 2 (Fl.3)		X (Fl.3)								
Fl.3 RETURNs to Fl.3 (ch.31)	Flute (Fl.3)		X (Fl.3)								
Alto to Fl.3 (ch.31)	Flute 3 (Alto Fl.)			X (Alto)							
Alto RETURNs to Alto (ch.4)	Alto (Alto Fl.)			X (Alto)							
Fl.3 to alto (ch.4)	Alto (Fl.3)		X (Fl.3)								
Fl.3 RETURNs to Fl.3 (ch.31)	Flute (Fl.3)		X (Fl.3)								
Fl.4 to alto (ch.4)	Alto (Fl.4)		X (Fl.4)								
Fl.4 RETURNs to Fl.4 (ch.17)	Flute (Fl.4)		X (Fl.4)								
Ob.1 to English Horn 1 (ch.8)	E. Horn 1 (Ob.1)				X (Ob.1)						
Oboe 1 RETURNs to Ob.1 (ch.5)	Oboe (Ob.1)				X (Ob.1)						
Ob.3 to English Horn 1 (ch.8)	E. Horn 1 (Ob.3)				X (Ob.3)						
Oboe 3 RETURNs to Ob.3 (ch.7)	Oboe (Ob.3)				X (Ob.3)						
Ob.4 to English Horn 2 (ch.19)	E. Horn 2 (Ob.4)				X (Ob.4)						
Ob. 4 RETURNs to Ob.4 (ch.18)	Oboe (Ob.4)				X (Ob.4)						
Clar.1 to Eb Clar. (ch.9)	Eb Clar. (Clar.1)								X (Cl.1)		
Clar.1 RETURNs to B♭ Clar.(ch.10)	Bb Clar. (Clar.1)								X (Cl.1)		
Clar. 2 to Bass Clar.1 (ch.12)	Bass Clar.1 (Clar.2)								X (Cl.2)		
Clar.2 RETURNs to Clar.2 (ch.11)	Clarinet (Clar.2)								X (Cl.2)		
Clar. 3 to Bass Clar.1 (ch.12)	Bass Clar.1 (Clar.3)								X (Cl.3)		
Clar. 4 to Bass Clar.2 (ch.21)	Bass Clar.2 (Clar.4)								X (Cl.4)		
Clar.4 RETURNs to Clar.4 (ch.20)	Clarinet (Clar.4)								X (Cl.4)		
Bsn.1 to Contra.1 (ch.16)	Contrabassoon 1 (Bsn.1)									X (Bsn.1)	
Bsn.1 RETURNs to Bsn.1 (ch.13)	Bassoon (Bsn.1)									X (Bsn.1)	
Bsn.3 to Contra.1 (ch.16)	Contrabassoon 1 (Bsn.3)									X (Bsn.3)	
Bsn.3 RETURN to Bsn.3 (ch.15)	Bassoon (Bsn.3)									X (Bsn.3)	
Bsn.4 to Contra.2 (ch.23)	Contrabassoon 2 (Bsn.4)									X (Bsn.4)	
Bsn.4 RETURN to Bsn.4 (ch.22)	Bassoon (Bsn.4)									X (Bsn.4)	
a2, a3											
Fl.1 + Fl.2 (ch.2+3)	a2 (f1+f2)		X (Fl.1)								
Fl.1 + Fl.2 + Fl.3 (ch.2+3+31)	a3 (f1+f2+f3)		X (Fl.1)								
Ob.1 + Ob. 2 (ch.5+6)	a2 (Ob1+Ob2)				X (Ob.1)						
Ob.1 + Ob.2+Ob.3 (ch.5+6+7)	a3 (Ob1+Ob2+Ob3)				X (Ob.1)						
Clar.1 + Clar.2 (ch.10+11)	a2 (Cl1+Cl2)								X (Cl.1)		
Cl.1+Cl.2+Cl.3 (ch.10+11+32)	a3 (Cl1+Cl2+Cl3)								X (Cl.1)		
Bsn.1 + Bsn.2 (ch.13+14)	a2 (Bsn1+Bsn2)									X (Bsn.1)	
Bn.1+Bsn.2+Bsn.3 (ch.13+14+15)	a3 (Bsn1+Bsn2+Bsn3)									X (Bsn.1)	
RETURN to 1. SOLO	1. Solo (1.) DIV 1. DIV 1. 2. 2. 3. 3.		X		X				X		X

10- THE ORCHSIM System • 10 Modes of playing = Ex: BRASSES

BRASSES Playing Techniques

Playing Techniques Kontakt	Finale Expressions* (*all expressions also available as "hidden" markings)	Meta Tool	Horns 1,2,3,4,5,6,7,8	Picc. Trumpet	Trumpets 1,2,3,4,5,6	Trombones 1,2,3	Bass trombones 1,2	Tubas 1,2
BRASSES								
GENERAL								
Volume change	(always ON) draw CC:7 in midi tool		X	X	X	X	X	X
Legato (for slurred notes)	Leg ON/OFF (hidden)	Q/W	X	X	X	X	X	X
Portato amount variable: fast+slow	Part 0 (0) > FAST (40) > MED (85) > SLOW (127) (hidden)	R/E	X	X	X	X	X	X
Vibrato amount variable: senza-molto	XI Vib. ON/OFF senza (0) > molto (127) (hidden) draw CC:20 in midi tool	T/Y	X	X	X	X	X	X
Vibrato norm. (default playing technique) (LongNotes Vib)	Or (hidden) ordinario / ord. norm. vib norm. con vib senza sord	A	X	X	X	X	x (espress) (molto vib.)	x (espress) (molto vib.)
Senza vib. (LongNotes aVib)	senza vib.	X	X	X	X	X	X	X
Espressivo (LongNotes mVib)	espress. molto vib.	C (vib. norm.)	X	X	X	x (vib. norm.)	X	X
Staccato	S (hidden) stacc.	S	X	X	X	X	X	X
Sforzando	Scripts [Cmd+Ctrl+O/P] sfz / offz (articulation) + sfz Trst		X	X	X	X	X	X
Flatterzunge	flutter z	N	X	X	X	X	X	X
Trills min. 2nd	Tr 2nd m (hidden)		(upcoming)	(upcoming)	(upcoming)	(upcoming)	(upcoming)	(upcoming)
Trills Maj. 2nd	Tr 2nd M (hidden)		(upcoming)	(upcoming)	(upcoming)	(upcoming)	(upcoming)	(upcoming)
Brasses Specific								
Timbral crossfade variable timbra changes with cresc./decrec. in held notes)	XI Timbral ON XI Timbral OFF (hidden) [transfers CC:7(volume) to CC:22]		X	X	X	X	X	X
Xtra Attack Horn	Xtra AT hrn ON Xtra AT hrn OFF (hidden)		X					
SfzP	sfzP		X					
Stopped (Bouché)	bouché +		X					
Brassy (Cuivre)	cuivré +		X					
Brassy SfzP (Cuivre)	cuivré sfzP		X					
Con sordino (sord straight)	con sord. "straight" mute	B	X	X	X	X	X	X
Cup closed	sord "cup closed"			X	X	X	X	
Cup half-open	sord "cup half-open"				X	X	X	
Cup open	sord "cup open"				X	X	X	
Cup senza stem	sord "cup senza stem"				X	X	X	
Harmon (wawa)	sord "harmon"			X	X			
Bucket (velvet)	sord "bucket" sord "plunger"			X	X	X	X	
Plunger (hidden) variable: 0 > +	Plunger MID closed (0) > open(127) draw CC:74 in midi tool			X	X	X	X	
a2, a3								
Hn. 1 + Hn. 2 (ch.43+44)	a2 (Hn1+Hn2)		X [Hn.1]					
Hn.3 + Hn.4 (ch.45+46)	a2 (Hn3+Hn4)		X [Hn.3]					
Hn1+Hn2+Hn (ch.43+44+45)	a3 (Hn1+Hn2+Hn3)		X [Hn.1]					
Tr. 1 + Tr.2 (ch.34+35)	a2 (Tr1+Tr2)				X (Tr.1)			
Tr1+Tr2+Tr3 (ch.34+35+36)	a3 (Tr1+Tr2+Tr3)				X (Tr.1)			
Trb. 1 + Trb. 2 (ch.37+38)	a2 (Trb1+Trb2)					X (Trb.1)		
Trb1+Trb2+Trb3 (ch.37+38+39)	a3 (Trb1+Trb2+Trb3)					X (Trb.1)		
1. Solo (1.)	DIV 1.		X		X	X		
2.	DIV 2.		X		X	X		
3.	DIV 3.		X		X	X		
RETURN TO 1. SOLO			X		X	X		

Playing Techniques Kontakt	Finale Expressions* (*all expressions also available as "hidden" markings)	Horns 1,2,3,4,5,6,7,8	Picc. Trumpet	Trumpets 1,2,3,4,5,6	Trombones 1,2,3	Bass trombones 1,2	Tubas 1,2
BRASSES							
Planned features							
Kisses 1							
Kisses 2							
KeyClicks 1							
KeyClicks 2							
Blow 1							
Blow 2							
Perc Mouthpiece 1							
Perc Mouthpiece 2							
Glas harm up							
Glas harm down							
Stabs							
Fall short							
Fall long							
Run down 12s							
Grace 1/2							
Doit up							
Run up 12s							
Horns I-IV		1931	1933	1932	1934		
1940	ORCHSIM Instr. ON (HORN ON/TURN OFF)	1939	ORCHSIM Instr. ON (HORN ON/TURN OFF)	1941	BERLIN Instr. ON (HORN ON/TURN OFF)	1942	
1948	default FURTHER (use both): Tree Mic = 85 (def) 0dB	1956	Tree Mic = 45 (def) -16dB	1957	Close Mic = 45 (def) -16dB	1958	
	CLOSER (use both): Tree Mic = 45 -16dB	1947	Tree Mic = 85 0dB	1949	Close Mic = 85 0dB	1950	
1959		1947	ord.	1949	bouché	1950	
1935		1936		1937		1938	

Playing Technique Change

Special Feature

Available

Functional but replaced by (...)



Finale Expressions in EXPRESSION TOOL BRASSES

Expression Selection

GENERAL	834	835	836	837	838
Log ON	Q 182	RESET	W 1330	1331	
Log OFF	A 591	Log OFF	B 1332	1333	
ix	R 757	ix	E 758	754	
Part 0 (0)	T 829	Part FAST (40)	V 316	1171	
XI Vib. ON	Z 537	XI Vib. OFF		806	
ord.	805	normal	85	807	
ordinario	805	ord.	vib norm.	806	
senza vib.	X 819	senza vib	molto vib.	87	
espress.	C 814	espress.	1333	1335	
staccato	88	staccato	1333	1335	
con sord	B 905	senza sord.	senza sord.	1337	
tremolo	103			N 140	
harm.	1334			1338	
	727			M 1340	
	1060			1061	

Expression Selection

BRASSES	811	U 812	813	814
norm.	776	norm.	831	134
senza sord.	859	con sord.	860	766
Trumpet	824	fluter	z	136
sord "plunger"	768	"straight" mute	sord "cup"	1183
805	805	sord "cup closed"	sord "cup half-open"	133
133	134	sord "cup senza stem"	sord "bucket"	1186
818	765			806
Plunger MID	764	ouvert	o	750
Horns	81	ouvert	o	806
bouché	127	+	+	723
sfzP	103	cuivré	cuivré	1160
Xtra AT hrn ON	1474	Xtra AT hrn OFF		1472
- doublings >	Picc Trumpet (Tpt. 1)	Trumpet (Tpt. 1)		859
-a2, a3 >	I. Solo	I.	I.	843
I.	a2 (Hn1+Hn2)	a2 (Hn3+Hn4)	a3 (Hn1+Hn2+Hn3)	848
I.	a2 (Tr1+Tr2)	a3 (Tr1+Tr2+Tr3)		950
	a2 (Trb1+Trb2)	a3 (Trb1+Trb2+Trb3)		1065

10- THE ORCHSIM System •11 (Instrument Modes of playing = Ex: KBOARDS - HARP)

Playing Techniques Kontakt	Finale Expressions* <small>(*some expressions available as "hidden" markings)</small>	Meta Tool	Keyboard 1	Keyboard 2	Keyboard 3	Keyboard 4	Organ	Harp 1	Harp 2
KEYBOARDS / HARP									
GENERAL									
Volume change	<i>(always ON)</i> draw CC7 in midi tool		active but Velocity preferable	X	X	X			
Sustain Ped ON	I.V.	P	X (except H.chord and Spinet)	X	X	X			
Sustain Ped OFF		O	X (except H.chord and Spinet)	X	X	X			
Sostenuto 3.Pedal ON			X (Pn.1-2)	X (Pn.1-2)	X (Pn.1-2)	X (Pn.1-2)			
Sostenuto 3.Pedal OFF			X (Pn.1-2)	X (Pn.1-2)	X (Pn.1-2)	X (Pn.1-2)			
una corda	una corda		X (Pn.1-2)	X (Pn.1-2)	X (Pn.1-2)	X (Pn.1-2)			
tre corde	tre corde		X (Pn.1-2)	X (Pn.1-2)	X (Pn.1-2)	X (Pn.1-2)			
Keyboards Specific									
Steinway Grand A (VSL)	Piano (1)		X	X	X	X			
Steinway B (XS)	Piano (2)		X	X	X	X			
Celesta (VSL)	Celesta (VSL)		X	X	X	X			
Celesta (XS)	Celesta (XS)		X	X	X	X			
Harp	Harp		X	X	X	X			
Spinet normal	Spinet normal		X	X	X	X			
Spinet Lute	Spinet-Lute		X	X	X	X			
Spinet effects	Spinet effects		X	X	X	X			
Toy Piano	Toy Piano		X	X	X	X			

Playing Techniques Kontakt	Finale Expressions* <small>(*some expressions available as "hidden" markings)</small>	Meta Tool	Keyboard 1	Keyboard 2	Keyboard 3	Keyboard 4	Organ	Harp 1	Harp 2
KEYBOARDS / HARP									
Orgue /Voix humaine 8'	Orgue: Voix humaine 8'							X	
Orgue positif /anches	Orgue positif: anches							X	
Orgue positif /fonds +quinte	Orgue positif: fonds +quinte							X	
Harp (VSL) normal	normal								X X
"près de la table"	"près de la table"								X X
étouffé	étouffé								X X
bisbigliando	bisbigliando								X X
harmoniques	harm.								X X

Playing Technique Change

Special Feature

X Available

x [...] Functional but replaced by (...)

Finale Expressions in EXPRESSION TOOL KEYBOARDS / HARP

10- THE ORCHSIM System •12 (Instrument Modes of playing = Ex: Percussion)

PERCUSSION Playing Techniques

Playing Techniques Kontakt PERCUSSION	Finale Expressions* (*some expressions available as "hidden" markings)	Meta Tool	Percussion 1	Percussion 2	Percussion 3	Percussion 4	Percussion 5	Percussion 6	TIMPANI 1	TIMPANI 2
GENERAL										
Volume change	(always ON) draw CC:7 in midi tool		X	X	X	X	X	X	X	X
Sustain Ped ON	1.v.	P	X (applicable instruments)	all Perc available	all Perc available					
Sustain Ped OFF		O	X (applicable instruments)	all Perc available	all Perc available					
Rolls / Tremolo	(key mapping OR prg. change)		X (applicable instruments)	all Perc available	all Perc available					
TIMPANI										
Soft Mallets	(prg. 101)		Timp available to all	X	X					
Soft Mallets Roll	(prg. 106)		Timp available to all	X	X					
Medium Mallets	(prg. 102)		Timp available to all	X	X					
Medium Mallets Roll	(prg. 106)		Timp available to all	X	X					
Hard Mallets	(prg. 103)		Timp available to all	X	X					
Hard Mallets Roll	(prg. 107)		Timp available to all	X	X					
Wood (Drum) Sticks hard	(prg. 104)		Timp available to all	X	X					
Wood (Drum) Sticks Roll hard	(prg. 108)		Timp available to all	X	X					
Fingers			Timp available to all	X	X					

PERCUSSION General Mapping

MAPPING: METAL instruments

MAPPING: DRUMS (skins)

Notation in Score: thunder sheet, 3 tam-tams, 3 metal plates, 3 cymbals, chinese cymbal, 2 triangles, chimes, hi-hat, bass drum, 4 tom-toms, snare

KEYS on Keyboard:

MAPPING: WOOD instruments with mallets/sticks

Notation in Score: 7 boo bam drums, 7 wood drums, 5 temple blocks, 4 wood blocks, 2 castagnets

KEYS on Keyboard:

Finale Expressions in EXPRESSION TOOL PERCUSSION

Main Tool Palette

Expression Selection

Timpani

- 1284 -GRAPHIC >
- 1285 -PLAYBACK >
- 1286
- 1287
- 1288
- 1289
- 1128
- 1129
- 1297
- 350
- 677 Timpani (soft)
- 678 Timpani (soft)
- 679 Timpani (medium)
- 680 Timpani (hard)
- 681 Timpani (sticks)
- 1127
- 1291

DRUMS skin + METAL instr

Sticks/Beaters

- 1125
- 1133
- 1135
- 1137
- 976
- 1139
- 1132
- 682
- 683
- 684
- 685
- 1332
- 1380
- 1126
- 248
- 1132
- 249
- 1136
- 979
- 1140
- 1131
- 1138
- 1134
- 250
- 977
- 1381
- 1379

Mallets/sticks/beaters (others)

- 1272
- 566
- 353
- 355
- 357
- 633
- 351
- 567
- 569
- 572
- 358
- 1110
- 1273
- 568
- 354
- 570
- 391
- 1111
- 1274
- 352
- 571
- 356
- 392
- 1112

SYMBOL	OrchSim	OrchSim	Berlin Strings
	Velocities	CC7 Equivalent	CC7 Equivalent
pppp	20	25	20
ppp	33	35	35
pp	49	40	45
p	59	50	55
mp	70	60	65
mf	79	70	70
f	88	80	80
ff	101	85	85
fff	118	95	95
ffff	127		(up to 127)

Pitch Variations (Pitch wheel)
 Kontakt = 6 steps (+ - aug4th) / midi RANGE = (+ -) 8191
 (200 cents) 1/ Tone = 2370
 (100 cents) 1/2 Tone = 1365
 (50 cents) 1/4 Tone = 682.5
 (33.33 cents) 1/6 Tone = 455
 (25 cents) 1/8 Tone = 341
 (16.67 cents) 1/12 Tone = 227.5

Saccini Solo Violin >

General >

CONTROLLER 24 (>Program Change) 0-127
 [(Program Change) 1-128]
 Progr Change #1 = CC24=0
 Changes Kontakt Group

CONTROLLER 96 OrchSim instr. ON = 0 / OT instr. ON = 127
 Kontakt script

CONTROLLER 7 (midi volume) reset to 96 (-6 db)
 Midi vol Finale (automatic 96 [-6db] > Finale Human Playback)
 Mixer volumes to ca 109-127 (standard = 110)

CONTROLLER 70 (Soloist 3db boost)
 Horns ord. Only 0-64 OFF
 65-127 ON

Piano/harp >

CONTROLLER 64 (sustain) off=0-64 / on=65-127
 Kontakt script

The Grandeur > CONTROLLER 80 (Position in space)
 closer= 40 / further= 105

CONTROLLER 66 (sostenuto/3.pedal) off=0-64 / on=65-127
 Kontakt script

CONTROLLER 67 (una corda/tre corde)
 una corda= 29 / tre corde= 61

CONTROLLER 67 (tre corde/ una corda) off=0-64 / on=65-127
 Kontakt script

CONTROLLER 68 (legato) off=0-64 / on=65-127
 automatic when notes overlap Kontakt script
 (automatic with Finale "Human Playback")

TO DO TO DO ??
 Cents Amount Xfade Time Bend Time
 Ctrl 1 (Bend ctrl Ctrl 5 (Xtime) Ctrl B4 (Btime) Ctrl x 77

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 TO DO
 (Legato Script SIPS V1/10)
 (specific for instruments)

CONTROLLER 1 (modulation) reset to 40
 Portato effect (in legato)

XS and VSL Strings >

CONTROLLER 73 (Strings attack) reset to 30
 fast=0 > slow=127

CH Solo Str > CONTROLLER 50 (sordino on/off)
 on = 127 off = 0
 Kontakt script convert cc24 to proper setting

CONTROLLER 25 (>Xfade vib, Bow pos, Bow press)
 off=0-64
 Xfade vib = 65
 Xfade Bow pos = 66
 Xfade Bow press = 67

CONTROLLER 11 (Dynamic Velocity Xfade)
 (selected, sustained-note programs)
 CONTROLLER 2 (Note Head)
 (superposes 12 different attacks to sust-note prgrs)

CONTROLLER 20 (table index >Xfade vib, Bow pos, Bow press)
 Xfade vib senza vib = 0 > molto vib=127
 Xfade Bow pos pont = 0 > ord=65 > sul tasto=127
 Xfade Bow press flaut=0 > ord=65 > scratch=127

Berlin Strings > CONTROLLER 3 (vibrato mode)
 ordinario: 127/senza vib. = 64/espressivo = 0
 (romantic) / (without) / (strong)
 Kontakt script convert cc24 to 3

VSL Strings >

CONTROLLER 19 (Bow Attack Noise) reset to 75
 Kontakt Script

CONTROLLER 50 (sordino on/off)
 on = 127 off = 0
 Kontakt script convert cc24 to proper setting

CONTROLLER 51 (concertmaster volume)
 default: 80

CONTROLLER 41 reset to 0 (OFF)
 Vibraphone motor speed

WWinds >

CONTROLLER 18 (Key Noise) reset to 0 (OFF)
 Kontakt Script

CONTROLLER 52 (Tree Mic volume)

CONTROLLER 42 off=127
 Sord & Muted Horns filter
 Muted Trp. filter

WWinds >

CONTROLLER 17 (Blow/Air Noise) reset to 0 (OFF)
 Kontakt Script

CONTROLLER 57 (Close/Tree Mic swap & purge)
 CONTROLLER 53 (Close Mic volume)
 (not activated)

CONTROLLER 43 off=0
 Muted Trp. Sordino
 Artificial Vibrato amount

Brasses, Strings >

CONTROLLER 22* (Xfade cresc/decresc) off=10 / on=127
 (reads CC7 Volume) Kontakt Script
 Perc. (cymb, timp, snare) TBD > *not compatible with CC25

CONTROLLER 54 (Surround Mic volume)
 (not activated)

CONTROLLER 55 (Bow Noise amount)
 (not activated)

Tr, Trb >

CONTROLLER 74 (plunger) closed=0-> open=127

Berlin WWinds > CONTROLLER 55 (Wind Noise amount)
 (not activated) (staccato only)

Horns >

CONTROLLER 19 (Xtra Attack Horns) off=0 / on=75
 Kontakt Script

Berlin Horns >

Berlin Timpani >

10- THE ORCHSIM System

•14 (REAL TIME CONTROLLERS -Excerpt)

EXAMPLE: CC (Continuous Controller) Real Time:

1. 2. (Bb) [also OT 1st Clarinet]
 119 120
 pp

1. 2. (+E.h.) [also OT 1st Oboe]
 119 120
 pp

EXAMPLE: Note assigned data:

1. 2. (Bb) [also OT 1st Clarinet]
 119 120
 pp

1. 2. (Bb) [also OT 1st Clarinet]
 119 120
 pp

B- ESTABLISHING A LINK BETWEEN VIRTUAL INSTRUMENTS AND SYMBOLIC NOTATION.

a. NOTE ENTRY: The original score is entered in the OrchSim Finale template containing all scripted symbols (text or graphic) a musician might encounter. Each symbol assigns a specific command to our sample engine. We developed a comprehensive classification of all music symbols in order to provide logical categories corresponding to the experience of the performer. These categories were integrated into our music notation program and adapted to its own formatting.

b. INTERPRETATION of a musical score: OrchSim is enriched with a new series of symbols (non-printable) to allow - as orchestral musicians would do - the modulation of most parameters of the "primary" information transmitted by the score into a real instrumental performance.

• For example, given a Haydn symphony, it is obvious that the score alone does not describe and prescribe all details contributing to a convincing interpretation of the piece; ONE IS LACKING INFORMATION about the •modes of attack, the •different types of phrasings, the •modulations of •timbre and •agogic, the goal-oriented •fluctuations of rhythm, •intonation, •vibrato and •tempo as well as the constantly varying •balance between members of a section or instrumental families in order to prioritize specific musical layers.

All those elements are nevertheless essential and the OrchSim system has been developed to implement them.

The possibilities range from:

- the placement of agogical and metrical stresses
- the duration and variation of timbre and dynamic over the course of held notes
- the control of the speed of attack
- the control of parasitic noise (bowing, air, wind instruments key noises, etc.)
- the position and pressure of the bow for the strings
- the control of the "cuivré" and sordino aperture for the brasses
- the vibrato
- the choice of beaters and their strike position on cymbals
- ... among many others ...

WORK FLOW

a. NOTE ENTRY and Layout*

EXAMPLE:

Symphonie N° 6.
II.
Adagio. Sehr feierlich. Anton Bruckner.

80 zu 2

Fl. zu 2
Ob. *dim.* zu 2
Kl. *dim.*
Fg. *dim.*
Hr. I. *dim.* I. allein
Tr. I
Ps. *p*
Viol. *dim.*
Br. *dim.*
Vc. u. Kb. *dim.*
111

U. E. 8596

* OrchMusic (OPM) pdf scores are designed as "STUDY SCORES". The layout of those scores is such that the teacher can print them and use them in the classroom or for assignments. The actual size and spacing of the staves makes it possible to directly write into the printed scores with a pencil or pen.

©RCHPLAYMUSIC
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Bruckner_Symph6_ii [mes.111-132]/ score in C 1

1 111 zu 2 112

Flutes 1. 2. *pp*

Oboes 1. 2. *pp*

Clarinets 1. 2. (B) *pp*

Bassoons 1. 2. *pp*

Horns 1. 2. (F) 111 *pp*

Horns 3. 4. (F)

Trumpets 1. 2. (F)

Trumpet 3 (F)

Trombones 1. 2.

Bass Trombone (Tb.3)

Tuba

Timpani

Violins I 1 111 *pp*

Violins II *pp*

Violas *pp*

Violoncellos *pp*

Double Basses *pp*

WORK FLOW **b. INTERPRETATION**

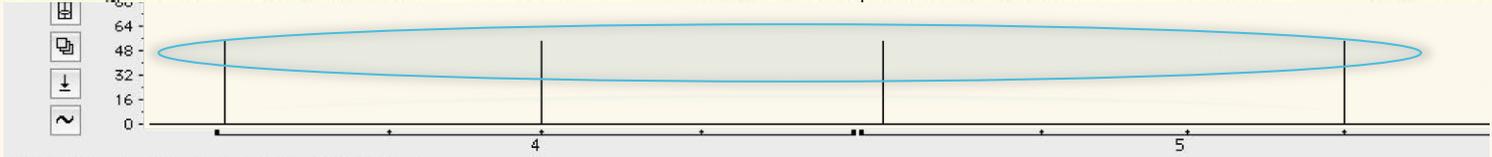
 Bruckner_Symph6_ii(111-132)

Kn OFF
Or
Leg ON
Port FAST (40)

111 zu 2 112

Flutes 1. 2.
(+picc+alto)
[also OT 1st Flute]

pp



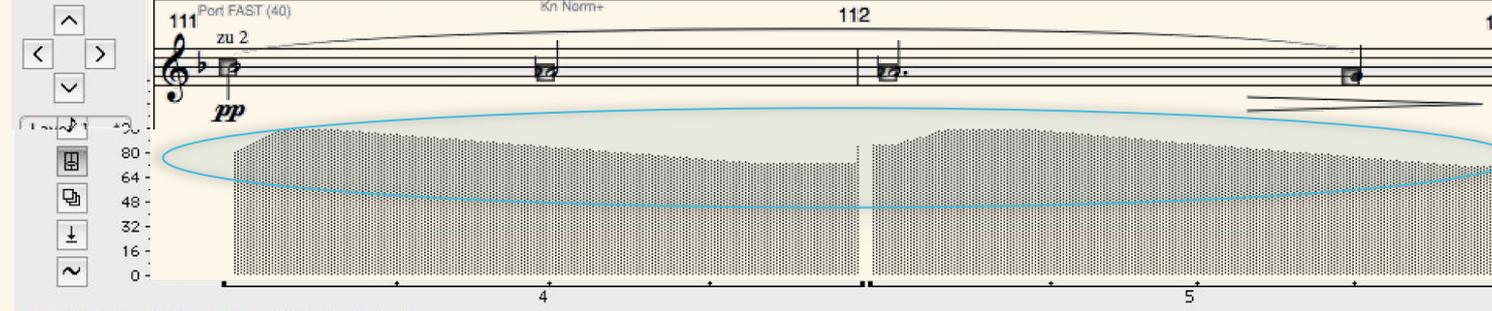
Staff: Flutes 1. 2. (+picc+alto) [also OT 1st Flute]
Measure: 111

111 Port FAST (40) Kn Norm+ 112 1

zu 2

pp

Staff: Flutes 1. 2. (+picc+alto) [also OT 1st Flute]
Measure: 111



Staff: Flutes 1. 2. (+picc+alto) [also OT 1st Flute]
Measure: 111

111 Port FAST (40) Kn Norm+ 112 11

zu 2

pp

WORK FLOW b. INTERPRETATION

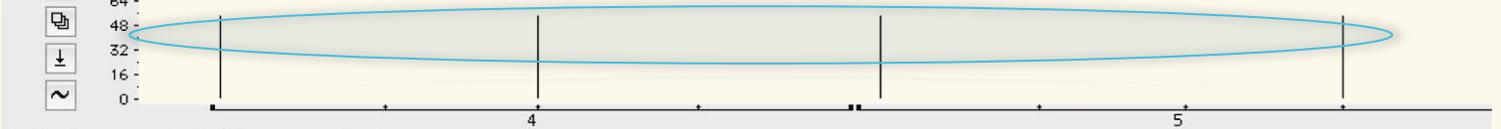
Bruckner_Symph6_ii(111-132)

espress.
Leg ON
Port FAST (40)

Oboes 1. 2.
(+E.h.)
[also OT 1st Oboe]

pp

Tree Mic = 40



Staff: Oboes 1. 2. (+E.h.) [also OT 1st Oboe]
Measure: 111

111 Leg ON
Port FAST (40)

112

Tree Mic = 40

pp

Tree Mic = 40

11

Staff: Oboes 1. 2. (+E.h.) [also OT 1st Oboe]
Measure: 111

111 Leg ON
Port FAST (40)

112

Tree Mic = 40

pp

Tree Mic = 40

11

Staff: Oboes 1. 2. (+E.h.) [also OT 1st Oboe]
Measure: 111

111 Leg ON
Port FAST (40)

112

Tree Mic = 40

pp

Tree Mic = 40

11

WORK FLOW b. INTERPRETATION: an "extreme case..."



Deb LaMer_i(84-92) CELL a

Un peu plus mouvementé (♩ = 69)

9

Très rythmé (♩ = 104)

Port SLOW (127)

Port SLOW (127)

XI Timbral ON
Bow AT Noise norm
Leg ON
espress.
norm AT (37)

XI Timbral ON
Bow AT Noise norm
Leg ON
espress.
norm AT (37) Port: MED (85)

XI Timbral OFF
Leg OFF
fast AT (17)

XI Timbral ON
norm AT (50) XI Timbral ON
Leg ON XI Timbral OFF
slow AT (50)

splice
norm AT (45)

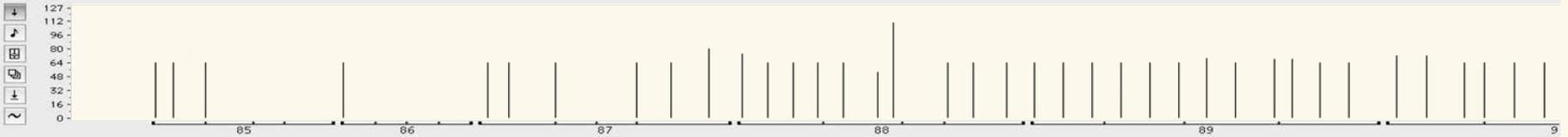
norm AT (37)

norm AT (20)

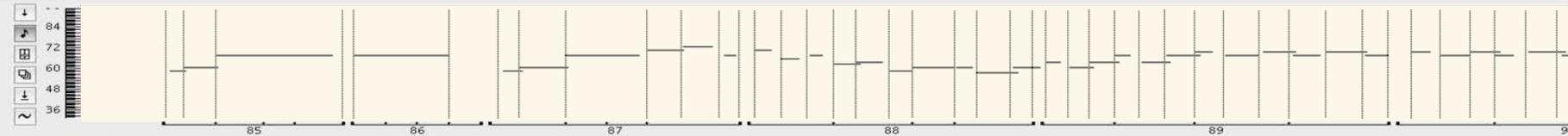
Leg ON
XI Timbral OFF
Leg OFF espress.
norm AT (25)

norm AT (25)

med AT (5)



Staff: Violoncellos (Tutti)
Measure: 84



Staff: Violoncellos (Tutti)

Measure: 84

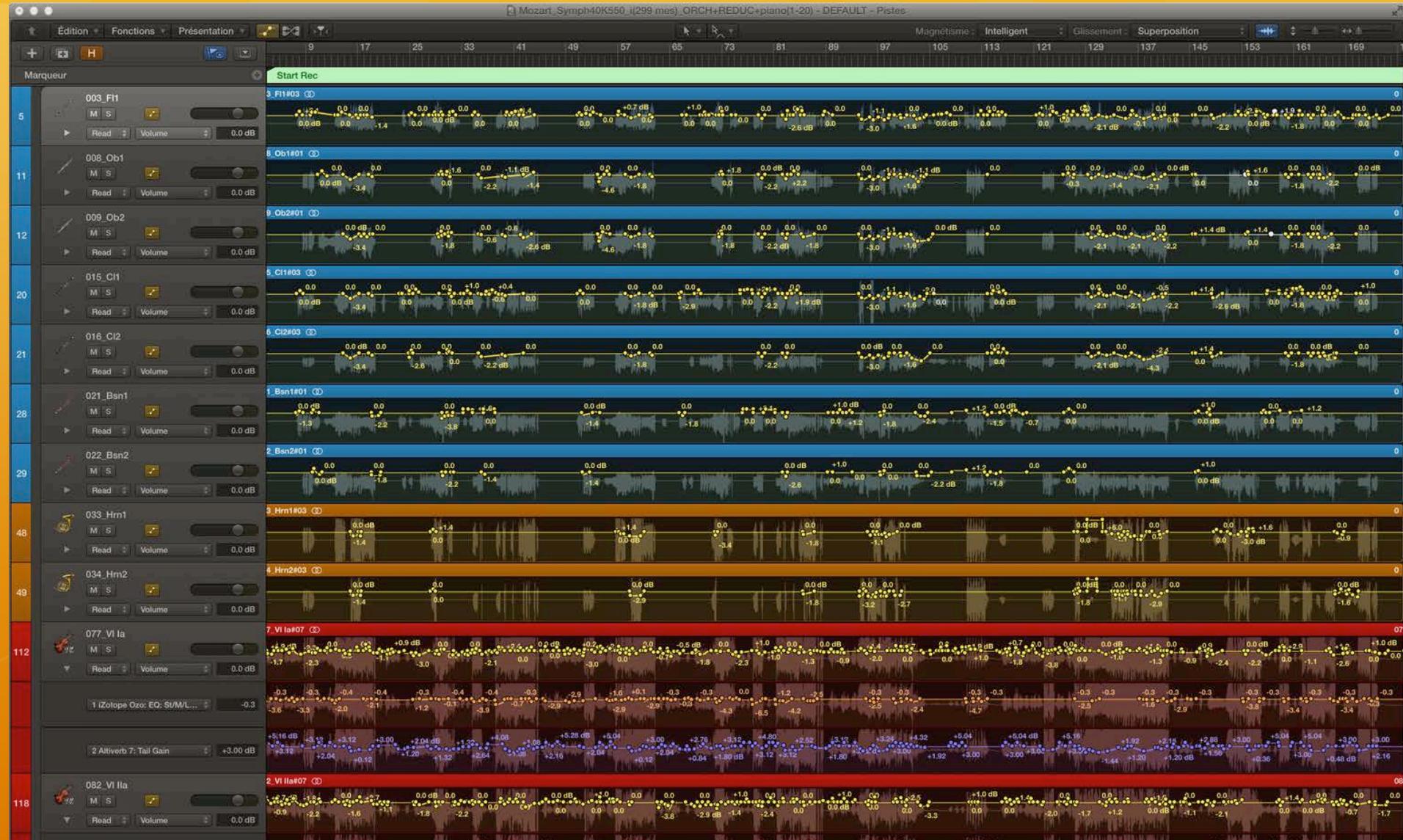


Staff: Violoncellos (Tutti)

Measure: 84

10- THE ORCHSIM System •16

C- RENDERING OF MUSIC SCORES in Logic Pro: fine tuning, balance and room details



10- THE ORCHSIM System ·17

C- RENDERING OF MUSIC SCORES in Logic Pro: fine tuning, balance and room details



The screenshot displays the Logic Pro software interface for a music score rendering project. The main window shows a piano roll with multiple audio tracks, including '043_Tr2#02', '048_Trb1#02', '049_Trb2#02', and '050_Trb3#02'. The tracks are arranged in a piano roll view, showing amplitude over time. The interface includes a transport control bar at the top, a mixer console at the bottom, and various control panels for individual tracks. The mixer console shows the '02f Bass Trombone - Far' track selected, with a 'Philharmonie' reverb plugin applied. The reverb plugin interface is visible, showing a 3D speaker model and various parameters like 'reverb time', 'EQ', and 'DAMPING'. The mixer console also shows other tracks like '048_Trb1', '049_Trb2', '050_Trb3', '061_Timp1', '065_Perc1', '066_Perc2', '069_Perc5', '070_Perc6', '072_Kb2', '063_Hrp1', and '064_Hrp2'. The interface is in French, with 'Présentation' and 'Editeur' buttons visible.

10- THE ORCHSIM System ·18

C- RENDERING OF MUSIC SCORES in Logic Pro: fine tuning, balance and room details



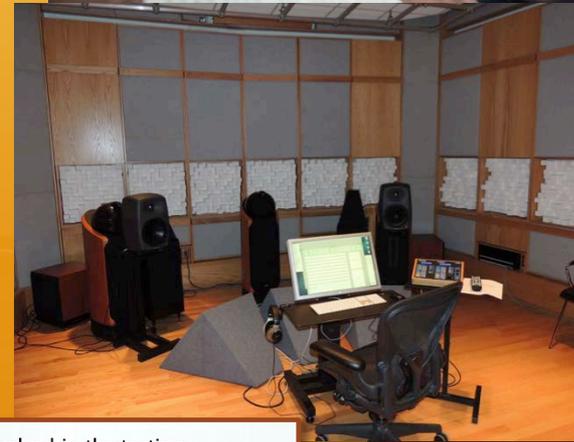
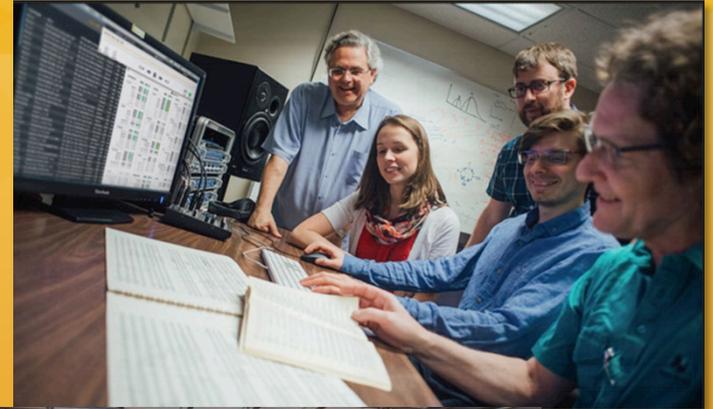
The screenshot displays the Logic Pro software interface. The main window shows a piano score for Mozart's Symphony No. 40, measures 33 to 53. Several tracks are visible, including two violin parts (077_VI Ia and 082_VI IIa) and a horn part (033_Hrn1). The tracks show waveforms and volume automation curves. In the bottom-left corner, the AltiVerb reverb plugin window is open, showing a 3D speaker layout for a 'Philharmonie Berlin, large hall' and various reverb parameters like 'reverb time', 'EQ', and 'DAMPING'. The AltiVerb window also includes a 'positioner' tab and a 'reverb IR' dropdown menu.

C- RENDERING OF MUSIC SCORES AND VALIDATION OF RESULTS

a. We first produced a series of renderings of representative works of the repertoire, from the classical to modern eras. Each excerpt was modelled on a selection of reference recordings and each individual part on the performance of a professional performer. As OrchSim developed, these renderings were gradually reworked and improved in search of higher quality and more convincing realism.

b. Over the years we submitted these renderings to many professional colleagues (composers, researchers from the **MPCL**, performers, sound engineers) for critical appreciation and collected their comments. Their feedback has been of prime importance for the improvement of what is now a hyper-realistic rendering process as well as the optimization of the notation system to efficiently control most aspects of the interpretation from a digitized music score.

c. Each OrchSim recording is not only rendering of the composer's prescriptions already in the score but also relies on the interpretation's traditions transmitted from generation to generation by the performers. OrchSim's recording quality has been tested in university research labs by professional musicians and can be favourably compared to professional high profile orchestral recordings in terms of realism and subtlety of interpretation.



"The Music Perception and Cognition Laboratory has been deeply involved in the testing and use of OrchSim and the OrchPlay Music Library over the last 4 years.

These highly refined tools have already revolutionized research into the perceptual foundations of orchestration practice by providing ways to explore orchestral techniques in subsets of instruments both in isolation and within their full musical context.

For the first time, rigorous research on **how** and **why** the compositions of great orchestrators work perceptually and emotionally has become possible with the OrchPlay Music Library.

Learning about orchestration has just crossed an amazing threshold!

-Dr. Stephen McAdams, Canada Research Chair in Music Perception and Cognition, Director of the 'Music Perception and Cognition Lab' (McGill University)

D- SOME A-B COMPARISONS

 Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57)

 Beethoven_Symph7_ii(1-98)

 Schubert_Symph8_i(1-62)

 Berlioz_SymphFantastique_iv(1-77)

 Mozart_DonGiovanni_Overture

 Smetana_Ma Vlast_iiMoldau(185-228)

 Stravinsky_4 Etudes_iv-Madrid(1 12 mes)

 MoussorgskyOrchRavel_Tableaux_VecchioCastello(30-52)

 Schoenberg_5Pieces_i(1-25)

The OrchPlay software provides access to all individual instrumental tracks of the full orchestra and enable subsets of instruments involved in a particular orchestral effect to be heard in isolation or within the full musical context.

A- OrchPlay FILES and FORMATS

B- USER INTERFACE:

- Player Window
- Information Drawer
- Bookmarks Menu
- Orchestra Window (Mixer and Stage)

C- The ENGINE

D- SCORES Formats

planned: • **Intelligent Score Follower**

E- BOOKMARKING System

planned:
• **Bookmark Generator and Manager**

F- CONNECTIONS

B- USER INTERFACE:

- Player Window
- Information Drawer
- Bookmarks Menu

PLAYBACK BAR (1)

The playback bar occupies the center of the interface. A round cursor indicates precisely the position of the playback head.

To the upper left are the information on the position in time units (00m 00s 00ms) followed by the measure number.

The screenshot shows the ORCHPLAY interface for Mozart's 40th Symphony. At the top, the title bar reads 'Mozart / Symph40 i(299 mes)'. Below it, the playback bar shows '02m 07s 36ms | mes. 009' on the left and 'from mes. 101 to mes. 226' on the right. A red circle '1' is placed on the playback bar. Below the bar are 'Volume' and 'Speed' knobs, and transport controls (rewind, play/pause, fast forward, and stop). A red circle '2' is placed on the selection/locator bar. Below the bar is the 'Information Drawer' (3) with a portrait of Mozart and text about the 40th Symphony. To the right is the 'Embedded Documents' section with a list of PDF files. Further right is the 'Bookmark Description' section with details about measures and instruments. A red circle '3' is placed on the information drawer. At the top right, a 'Mozart bookmarks / 40th dev. Violins+Winds' menu is shown with a red circle '5'.

SELECTION/LOCATOR BAR (2)

The selection/locator bar is directly under the playback bar; it is activated or deactivated with a double-click. An excerpt can be selected either by positioning its extremities or by using the measure number selector under the Bookmark Menu which will insure a precise position at the beginning of the measure.

VOLUME AND SPEED CONTROL

The rotating knobs on the bottom left control the global volume (-100/+40 dB) and the the playback speed (-33%/+33%).

TRANSPORT CONTROLS

The transport controls are located at the bottom center. In the middle is the start/pause controls and at the sides are the fast forward and rewind to the next bar. Around the play/pause button are the fast playback forward or backward functions (2x, 4x, 8x, increasing with the number of clicks).

SCORE AND ORCHESTRA WINDOW

On the bottom right side are the buttons to open the score or the Orchestra window.

INFORMATION DRAWER (3)

[left] General Information: Picture of the composer and short note on the selected piece.

[center] Embedded Documents: Here are the documents linked to the piece.

The OrchPlay Music Library always provide a study scores in pdf but one can also drag-and-drop any document to be embedded and linked (secondary stereo audio file, text, pdf, jpg or other).

[right] Bookmark Description: Space reserved for bookmarks details.

SELECTION MENU (4)

The menu is divided in 2 superimposed sections:

The User Library comprising the stereo files imported in .OPL format and sorted into user-defined folders.

The OrchPlay Music Library holding all multichannel files downloaded by the user from the Download window sorted by composer name.

BOOKMARKS MENU (5)

Each excerpt selected with the Selection/locator bar can become a bookmark to be saved and always linked to a piece of either the User Library or the OrchPlay Library.

The instrumental combinations and volume settings made in the Orchestra window will be saved at the same time.

ORCHESTRA WINDOW

The Orchestral Window provides control over the instruments of the orchestra when playing OrchPlay Music Library multichannel files.

B- USER INTERFACE:

- Orchestra Window

Orchestra Window - Mixer View

Orchestra Window - Stage View

Music Library Download Window

Orchestra Window - Mixer View

Orchestra Window - Stage View

Music Library Download Window

Mixer View

The default view is the Mixer View. The Mixer View features a list of all the instruments involved in a particular piece. Each family, section or individual instrument is monitored with an audio meter and can be soloed or muted and have its individual volume adjusted. All settings can be saved with our bookmarking system.

Stage View

The Stage View is a bird's eye visual representation of the orchestra. Each instrumental family and member of the orchestra are easily identifiable graphically. A simple click of the mouse on an instrument enables or disables its playback and shift-clicking will solo a whole family. This view might appeal especially to young users.

C- The ENGINE

The OrchPlay engine supports the playback of an unlimited number of stereo audio channels in 24-bit lossless proprietary OPL format. It currently supports the simultaneous playback of 152 instruments, 4 reduction tracks as well as an ambience track. It is extremely efficient: even the largest orchestral OrchPlay files are loaded instantaneously.

D- SCORES Formats

planned: • Intelligent Score Follower

- a.** OrchPlayMusic (OPM) pdf scores are designed as "STUDY SCORES". The format and layout is such that the teacher can print them and use them in the classroom or for assignments. OrchPlayMusic scores are meant to be used for orchestration work and research; they provide space to try out many different orchestration possibilities.
- b.** OPM scores are always organized in the following fashion and PROVIDE:
- b.1 (from the top of the page): All staves for the instruments involved in a particular piece in the classical family ordering. No staff is left out when an instrument is not playing.
- b.2 (bottom of the page) A series of Grand Staves to be used for
FULL REDUCTIONS: All notes actually played by the orchestra; an "unplayable analytical score" from a pianistic point of view.
SELECTIVE REDUCTIONS: Per family, for ex.: WWinds, Brasses, Strings; all notes played by a specific instrumental family.
PIANO VERSIONS: Playable versions by a pianist, involving a selective approach and idiomatic adaption.
- b.3 The REDUCTION staves names always include in parentheses the audio channel they are recorded on in the OrchPlay Player's Stage View when available.
- c.** SCORES in C: OPM provides all scores in C ("sounding"). While working with transposed scores is integral part of the orchestrator's "métier", experience in the classroom has demonstrated that students come up with more sensible results (and faster) when they work "in C".
- d.** DIFFERENT VERSIONS of the score:
- ORCH
 - ORCH+REDUC
 - ORCH+piano
 - ORCH+REDUC+piano
 - other instrumental formations (such as BRASS_REDUC, STR+REDUC, etc.)
- e.** **An intelligent score follower** is in the planning. **The score will be sync with the audio file and will redraw automatically, displaying only the instruments selected in the OrchestraWindow.**

E- BOOKMARKING System

Planned:

• Bookmark Generator and Manager

Composer	piece_display_name	Bar(s)	Audio File Nr	Instrument	Perc/Kb Instr	Family	Role/Tech
Beethoven	Symph4_(80-110,350-371)			***Fl 1*Ob 1*Vl I		**WW*STR	Doubling Muti Oct Reinforce

[FILTER DATA](#) [RESET DATA](#)

← ENTER CRITERIAS (contiguous)



SEARCH: Filtering Text Values

The rules for applying the advanced filter to text values are listed in the following table:

USE FIRST:

text or *text Select cells whose contents contain the string "text"

text1*text1 Select cells containing the 2 strings (non contiguous) but in that order. For ex: Fl*Bsn=OK / Bsn*Fl=NO result
(Note for multiple *text* searches: enter texts in the Dropdown Menu order of the Column)

* are added automatically

text	Select cells whose contents begin with the string "text"
=text	Select cells whose contents are <u>exactly equal</u> to the string "text" Note: does NOT function
<>text	Select cells whose contents are <u>not equal</u> to the string "text"
>text	Select cells whose contents are ordered (alphabetically) <u>after</u> the string "text"
text*text	Select cells whose contents <u>begin with</u> the string "text" AND <u>contain a second occurrence</u> of the string "text"
=text*text"	Select cells whose contents <u>begin with</u> the string "text" AND <u>end with</u> the string "text"
?text	Select cells whose contents <u>begin with any single character, followed by</u> the string "text"
=text?text"	Select cells whose contents <u>begin with</u> the string "text" AND <u>end with</u> the string "text" AND contain exactly one character between these two strings
=???"	Select cells whose contents contain exactly 3 characters

In the above table, two wildcards have been used. These are:

- the * symbolises any number of characters
- the ? symbolises any single character.

Also note that Excel filters are not case-sensitive so, for example, a filter based on the string "text" returns exactly the same result as a filter based on the string "TEXT".

TAGGING PROTOCOL

NOTE-1: For each piece FIRST make the Tag "All Instruments featured in Excerpt" in cell "INSTRUMENT"

NOTE-2: Use ONLY Instruments with full description [Ex.: Fl 1, Vl I] and NOT only Fl or Bsn

NOTE3: For Soloists (CONCERTI) > write "Piano solo" in Column 'Perc/Kb Instr Soloists'

TAGS ORDER:

- Step 1- "All Instruments featured in Excerpt"
- Step 2- All Family CHOIRS
- Step 3- Foreground - Middleground - Background, etc.
- Step 4- Doublings, etc.
- Step 5- Others

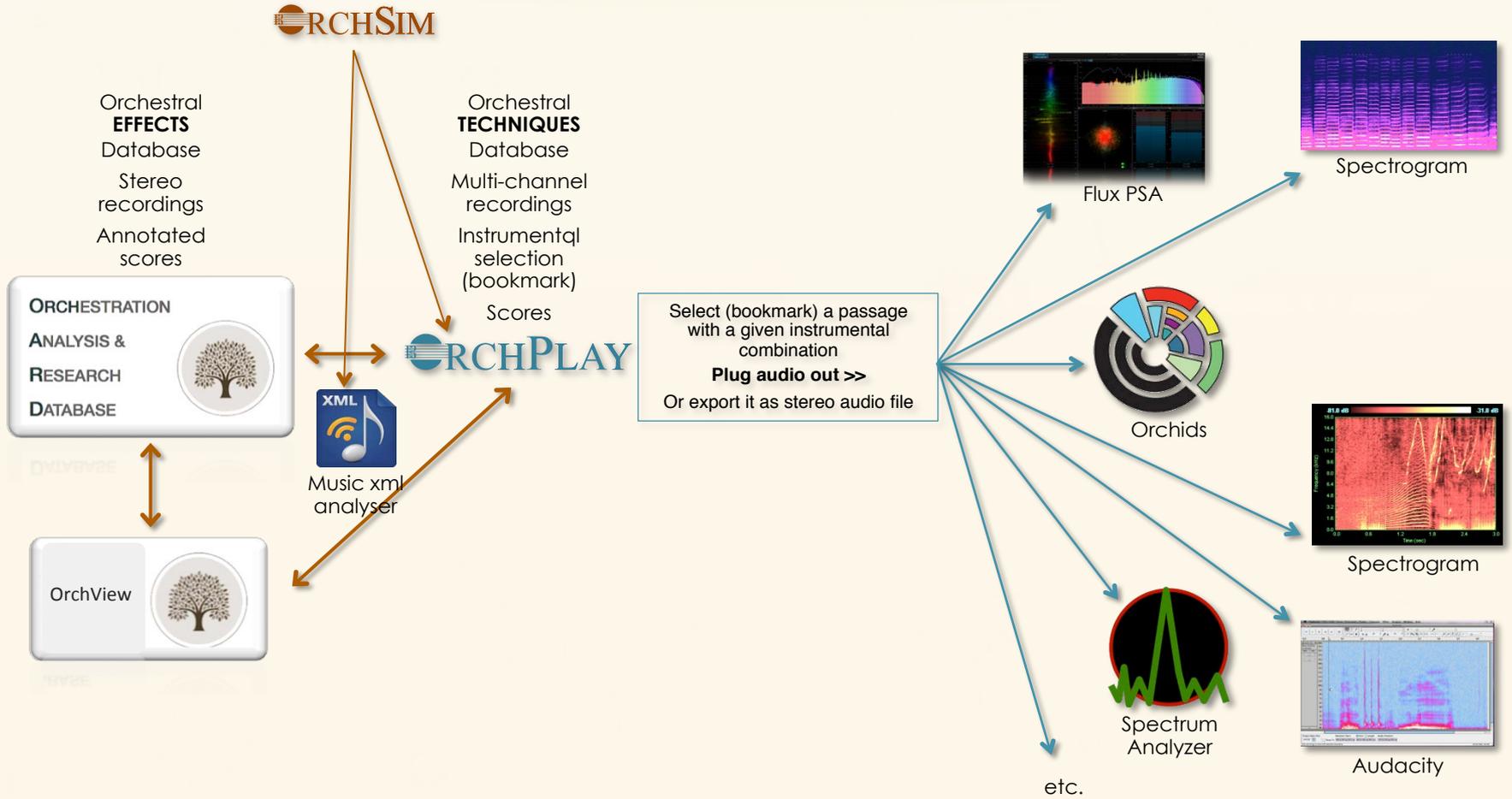
SYNTAX for "tagging":

Instruments, Sections, Families: + for grouping Instruments, Sections, Families

Roles: and for combined (multiple) Roles

Roles: vs for opposing (alternating) Groups

F- CONNECTIONS



PART-A

- 1- THE STUDY OF ORCHESTRATION AND THE COMPREHENSION OF ITS NATURE AND MECHANISMS
- 2- TOOLS ONE CAN DREAM OF: An Orchestra in each classroom ?
- 3- THE MORE DOWN-TO-EARTH REALITY: The hopes raised by the new multitrack recording technologies
- 4- AN ALTERNATIVE? The standard "out-of-the-box" SIMULATION TECHNIQUES: MIDI protocol and sound sampling banks; Notation software
- 5- But... "All my students are using music notation programs with rendering software"...
- 6- Let's sum it up: If a software is needed... then a good one should be provided, a software that you can learn with and that we could name the *"best possible substitute for a live orchestra"* ...
- 7- THE CHALLENGE: What can a "best possible substitute for a live orchestra" be... What must it be able to do?
- 8- The TOOLS needed:
 - 1• A reliable, flexible PRODUCTION SYTEM to generate true multi-track files with maximum "realism"
Renderings should be literally indistinguishable from a live orchestra and enable different interpretations with controllable parameters
 - 2• A simple but very efficient multi-track file PLAYER
- 9- The PROPOSAL:
- 10- ORCHSIM
- 11- ORCHPLAY

PART-B (Contribution to Research)

DESCRIBING and COMMUNICATING: Developing a TAXONOMY; two angles of approach are being developed:

- 12- from the PERCEPTUAL perspective: **the orchestral EFFECTS** > ORCH.A.R.D. Taxonomy
- 13- from the TRADITIONAL perspective: **the ROLES of instruments** > OrchPlay Taxonomy
"PRACTICE" **orchestral TECHNIQUES**

PART-C (Contribution to Research)

- 14- ORCHSIM within the Orchestration & Perception Project
- 15- ORCHPLAY within the Orchestration & Perception Project

DESCRIBING AND COMMUNICATING: THE TAXONOMY -b

"It is a difficult matter to define tone quality in words; we must encroach upon the domain of sight, feeling, and even taste. Though borrowed from these senses, I have no doubt as to the appropriateness of my comparisons, but, as a general rule definitions drawn from other sources are too elementary to be applied to music. " Rimsky-Korsakov, Nikolai - Principles of Orchestration, p.13

"Oboe: **Artless and gay in the major, pathetic and sad in the minor.** " Rimsky-Korsakov, Nikolai - Principles of Orchestration, p.17

"But the colouristic use of the xylophone is not always reserved for such tranquil scenes. **The instrument can contribute a sure touch of the macabre, or give the music a twist towards the grotesque,** as in Stravinsky's outlandishly orchestrated Saraband in Agon. " Brindle, Reginald Smith - Contemporary Percussion, p.39

"Au-dessus du fa(5) **le timbre devient très pathétique dans le mf et le f, c'est à cette tessiture que la clarinette chante passionnément, -d'une voix entre toutes "féminine"**, disait Berlioz." Koechlin, Charles - Traité de l'Orchestration, volume 1, p.31c

"Quant au registre que j'appelle le medium haut, et principalement de do(4) à sol(4) **il semble que sa poésie merveilleuse nous puisse évoquer, l'immatériel, il est alors, entre tous, l'instrument du rêve, de la légende, de la chimère.**" Koechlin, Charles - Traité de l'Orchestration, volume 1, p.49

"COR ET COR ANGLAIS. Pour l'UNISSON, **la fusion est plus intime** qu'avec le Hautbois (surtout dans le medium du cor). Quant aux OCTAVES, plutôt lourdes dans le grave, elles sonnent fort bien en montant vers l'aigu." Koechlin, Charles - Traité de l'Orchestration, volume 2, p.188b



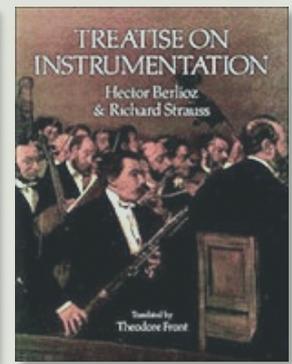
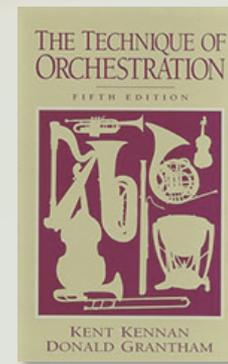
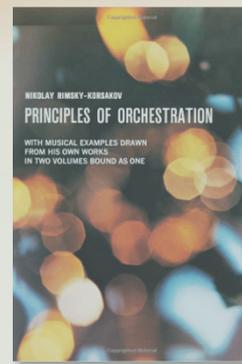
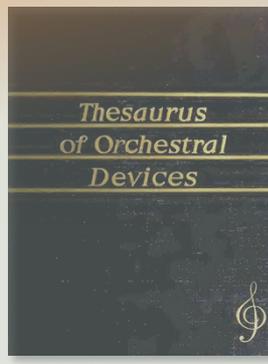
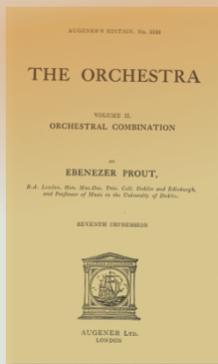
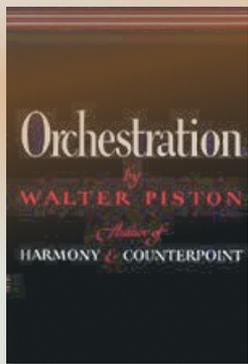
...the list could go on and on...

? Is there a way to come up with a coherent taxonomy of Orchestral effects and techniques ?

Two angles of approach are being developed:

1- from the PERCEPTUAL perspective: **the orchestral EFFECTS** > ORCH.A.R.D. Taxonomy

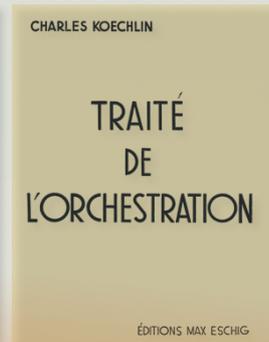
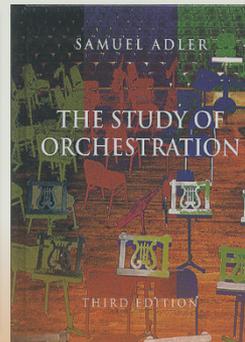
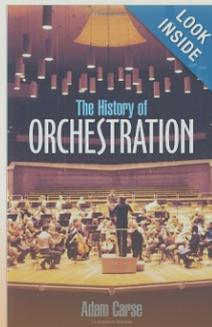
2- from the "PRACTICE" perspective: **the ROLES of instruments / orchestral TECHNIQUES** > OrchPlay Taxonomy



?? Is there a way to come up with a coherent and encompassing taxonomy of Orchestral effects and techniques ??

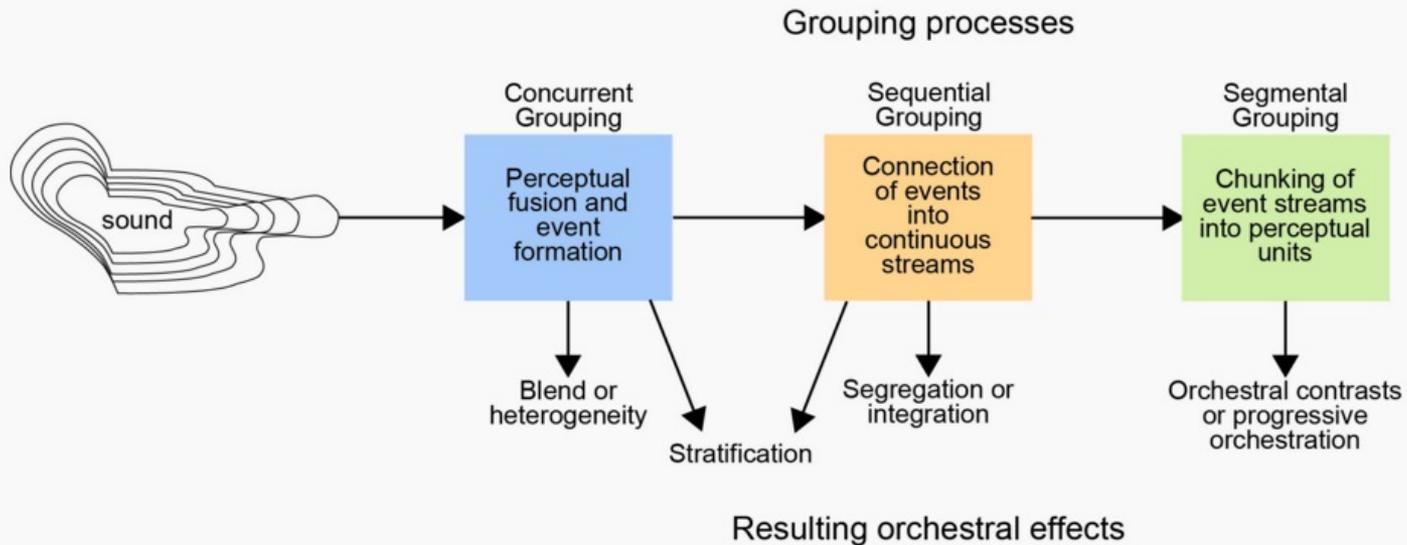
Two angles of approach are being developed:

- 1- from the PERCEPTUAL perspective: **the orchestral EFFECTS** > ORCH.A.R.D. Taxonomy
- 2- from the TRADITIONAL perspective: **the ROLES of instruments** > OrchPlay Taxonomy
"Practice" **orchestral TECHNIQUES**



12- TAXONOMY from the PERCEPTUAL perspective -1: the orchestral EFFECTS > ORCH.A.R.D.

Figure 1 - Orchestral effects and auditory grouping processes (McAdams & Goodchild, 2016)

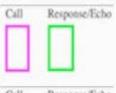


ORCHESTRATION
ANALYSIS &
RESEARCH
DATABASE



12- TAXONOMY from the PERCEPTUAL perspective -2: the orchestral EFFECTS > ORCH.A.R.D.

Table 1 - Orchestral effects, subtypes, and descriptions arranged by grouping processes

Grouping process	Orchestral effect	Subtypes and descriptions	Analysis Key
Concurrent	Blend	Augmentation involves one instrument embellishing another, with one instrument dominating the combination (Sandell, 1995). Example	
		Emergence involves synthesizing a new timbre that is identified as none of its constituent instruments (Sandell, 1995). Example	
		Heterogeneity involves cases where instruments are doubled at intervals that correspond to the harmonic series (P1, P8, P5, etc.), starting and stopping together and playing in parallel in terms of pitch and dynamics (i.e., they look on the score like they should blend), but they are heard more or less independently. Example	
		Punctuation blend occurs when a vertical sonority with several instruments involves a synchronous onset for a single chord, often at a higher dynamic for accentuation. It also is often of fairly short duration so that the listener doesn't have time to analyze the constituent instruments. Example	
		Textural integration occurs when two or more instruments have different material (i.e., contrasting rhythmic figures or pitch material) but integrate to create a single textural layer. It is perceived as being more than a single instrument (i.e., emergence or augmentation), but less than two segregated layers. Example	
Sequential	Segregation	Segregation involves clearly distinguishable voices with nearly equivalent prominence or salience. The different instrumental parts must be coequal, often scored as contrapuntal melodic lines with rhythmic independence. Normally segregation occurs with individual instruments, although totally fused instrument pairings or groupings could also constitute a "virtual" voice. Example	
Concurrent/Sequential	Stratification	Stratification creates two or more layers of musical material, separated into more and less prominent strands (notions of foreground, middleground, and background). Stratified layers often have more than one instrument in at least one of the layers, which have varying levels of prominence. Example	
Segmental	Orchestral contrasts	Antiphonal contrasts sections require call and response type phrase structure, where the response is musically related as a consequence to the call material, but not the same. Each alternating musical unit is scored with different instrumentation. Example	

Timbral echoes involve a repeated musical phrase or idea with different orchestrations. This is distinct from an antiphonal figure, because each group plays the same musical idea (echoing each other), rather than playing an antecedent or consequent phrase; however, one group seems more "distant" than the other. [Example](#)



Timbral shifts can be conceived of as an orchestral "hot potato" or timbral variation, wherein musical materials are reiterated with varying orchestrations (i.e., a repeated phrase is "passed around" the orchestra). Perceptually it is similar to timbral modulation, but is presented in discrete steps, rather than as a seamless coherent grouping. [Example](#)



Sectional boundaries involve changes in timbre, which cause segmentation (chunking) of sequences. Large-scale sections in music are formed on the basis of similarities in register, texture and instrumentation (i.e., timbre). Ergo, timbre change leads to a boundary creation, while timbre similarity leads to chunking of events into coherent units. [Example](#)



General contrasts is currently a "catch all" category, in which timbral changes signal boundary creation, but the specific circumstances do not fall within these categories. Segments annotated as general contrasts will be revisited to discover new categories. [Example](#)

Segmental Progressive orchestration

Klangfarbenmelodie, a technique first explicitly explored by Schoenberg and Webern, is the succession of tone colours, analogous to pitches in a melody (although often accompanied by pitch melody as well). In our conception, it really serves a melodic function and could be considered "timbre melody." [Example](#)



Timbral modulation involves a succession of gradually changing blended or integrated timbres, which is capable of unifying all the transitional timbres into a coherent grouping [adapted from Schnittke (2006)]. [Example](#)

Segmental (contrasts/progressive) Orchestral gestures

Orchestral gestures are large-scale timbral and textural changes that occur in a goal-directed manner, creating a sense of agency and emotional force (Goodchild, 2016). The types are defined by changes in instrumentation in terms of time course (gradual or sudden changes) and direction (additive or reductive changes). The four types relate to the descriptions in the literature of an orchestral crescendo ([gradual addition](#)), the reverse process ([gradual reduction](#)), and timbral contrasts including a rapid switch to full forces ([sudden addition](#)) and the drop-off to a contrast subgroup or soloist ([sudden reduction](#)).



13- TAXONOMY from the PRACTICE perspective: the ROLES of instruments > **OrchPlay** orchestral TECHNIQUES

ROLE of Instrument/ Section/Family	ORCHESTRAL Scoring TECHNIQUES/settings
Solo	1) Solo
Solo Section	1.1) Individual INSTRUMENT or a small group of instruments for SOLO passages (melodies, motives, gesture)
Solo Family	1.2) Individual SECTION for SOLO passages (melodies, motives, gestures) 1.3) Strings FAMILY for SOLO passages (melodies, motives, gestures)
Choir Chamber (Duo>Quintet+)	2) Participation of the Family, from 1 instrum. to typical, balanced x-parts setting
<i>Note: can be "multi"</i>	
Foreground	3) Global organization of layering as Musical Stratas
Middleground	•Foreground (main melody, motive, pattern)
Background	•Middleground (counterpoint, secondary/counter melody, motive, pattern, figuration, texture) •Background (accompaniment, counterpoint, secondary motive, pattern, figuration, harmony, texture)
Pedal	•Selective "Pedal" effects
Harm Obscuring	•Harmony obscuring role
Texture	•Sustained texture
Ostinato	•Ostinato foundation
Accentation	•Rhythmical/Metrical stresses (agogic)
Drama	•Dramatic enhancement
Register for Foreground	4) Use of particular registers to bring out specific lines ("structural" and/or "coloristic" purposes) [related to voice crossing >"pitch-driven dynamic"]
Contrapuntal	5) Contrapuntal writing
Doubling	6) Unison and Octave doublings (for ex.: to bring out a melodic/motivic/pattern statement)
<i>Note: can be "selective", "fused"</i>	
<i>Note: can be "mutual", "other"</i>	
Doubling Unis	
Doubling Oct	
Doubling Multi Oct	
Doubling Unis Reinforce	•for reinforcement
Doubling Oct Reinforce	•large homophonic writing (dynamic related textures)
Doubling Multi Oct Reinforce	
Doubling Unis Timbral	•for timbral coloration and Variation
Doubling Oct Timbral	
Doubling Multi Oct Timbral	
Dominating	
Climax Fam	
Fusing Role	7) Fusing Factor in Orchestration
Coupling	8) Parallel interval doublings (more or less systematic) [for ex.: to enrich the harmony and texture]

ROLE of Instrument/ Section/Family	ORCHESTRAL Scoring TECHNIQUES/settings
Homophonic	9) Homophonic writing
Homophon-Unis-Tutti	•Unison-Tutti
Homophon-Oct-Tutti	•Octave-Tutti •Multi-Octave-Tutti
Variation Textural Fam	10) Use for Textural and Timbral changes and contrasts (for ex.: to differentiate between melodic/motivic statements)
Variation Textural Section	•varying a passage previously played by another family
Variation Textural Instr	•varying a passage previously played by another section •varying a passage previously played by another instrument
Variation Timbral Fam	•varying a passage previously played by another family
Variation Timbral Section	•varying a passage previously played by another section
Variation Timbral Instr	•varying a passage previously played by another instrument
Contrast Textural Fam	•repeating or echoing a passage previously played by another family
Contrast Textural Section	•repeating or echoing a passage previously played by another section
Contrast Textural Instr	•repeating or echoing a passage previously played by another instrument
Contrast Timbral Fam	•repeating or echoing a passage previously played by another family
Contrast Timbral Section	•repeating or echoing a passage previously played by another section
Contrast Timbral Instr	•repeating or echoing a passage previously played by another instrument
Transformation Textural Fam	
Transformation Textural Section	
Transformation Timbral Fam	
Transformation Timbral Section	
KlangfarbenMelodie	•Klangfarbenmelodie
TUTTI	11) Global techniques
Orchestrated Crescendo	
Orchestrated Decrescendo	
Sound FX	12) Sound Effects, Exotic associations, Cultural Signals (symbols, icons, cultural referents)
Sound Assoc	•Sound Effect
Sound Evocation	•Exotic Association
Sound Signal	•Evocation
Sound World	•Sound Signal •Sound World

• Looking for Points of correspondence or equivalence

ROLE of Instrument/ Section/Family	ORCHESTRAL Scoring TECHNIQUES/settings
Solo Solo Section Solo Family	1) Solo 1.1) Individual INSTRUMENT or a small group of instruments for SOLO passages (melodies, motives, gestures) 1.2) Individual SECTION for SOLO passages (melodies, motives, gestures) 1.3) Strings FAMILY for SOLO passages (melodies, motives, gestures)
Choir Chamber (Duo>Quintet+)	2) Participation of the Family, from 1 instrum. to typical, balanced x-parts setting
Note: can be "multi" Foreground Middleground Background	3) Global organization of layering as Musical Stratas •Foreground (main melody, motive, pattern) •Middleground (counterpoint, secondary/counter melody, motive, pattern, figuration, texture) •Background (accompaniment, counterpoint, secondary motive, pattern, figuration, harmony, texture)
Pedal Harm Obscuring Texture Ostinato Accentation Drama	•Selective "Pedal" effects •Harmony obscuring role •Sustained texture •Ostinato foundation •Rhythmic/Metrical stresses (agogic) •Dramatic enhancement
Register for Foreground	4) Use of particular registers to bring out specific lines ("structural" and/or "coloristic" purposes) [related to voice crossing > "pitch-driven dynamic"]
Contrapuntal	5) Contrapuntal writing
Doubling Note: can be "selective", "fused" Note: can be "mutual", "other" Doubling Unis Doubling Oct Doubling Multi Oct	6) Unison and Octave doublings (for ex.: to bring out a melodic/motivic/pattern statement)
Doubling Unis Reinforce Doubling Oct Reinforce Doubling Muti Oct Reinforce	•for reinforcement •large homophonic writing (dynamic related textures)
Doubling Unis Timbral Doubling Oct Timbral Doubling Multi Oct Timbral	•for timbral coloration and Variation
Dominating	
Climax Fam Fusing Role	7) Fusing Factor in Orchestration
Coupling	8) Parallel interval doublings (more or less systematic) [for ex.: to enrich the harmony and texture]
Homophonic Homophon-Unis-Tutti Homophon-Oct-Tutti	9) Homophonic writing •Unison-Tutti •Octave-Tutti •Multi-Octave-Tutti
Variation Textural Fam Variation Textural Section Variation Textural Instr Variation Timbral Fam Variation Timbral Section Variation Timbral Instr	10) Use for Textural and Timbral changes and contrasts (for ex.: to differentiate between melodic/motivic statements) •varying a passage previously played by another family •varying a passage previously played by another section •varying a passage previously played by another instrument •varying a passage previously played by another family •varying a passage previously played by another section •varying a passage previously played by another instrument
Contrast Textural Fam Contrast Textural Section Contrast Textural Instr	•repeating or echoing a passage previously played by another family •repeating or echoing a passage previously played by another section •repeating or echoing a passage previously played by another instrument
Contrast Timbral Fam Contrast Timbral Section Contrast Timbral Instr	•repeating or echoing a passage previously played by another family •repeating or echoing a passage previously played by another section •repeating or echoing a passage previously played by another instrument
Transformation Textural Fam Transformation Textural Section Transformation Timbral Fam Transformation Timbral Section	
KlangfarbenMelodie	•Klangfarbenmelodie
TUTTI Orchestrated Crescendo Orchestrated Decrescendo	11) Global techniques
Sound FX Sound Assoc Sound Evocation Sound Signal Sound World	12) Sound Effects, Exotic associations, Cultural Signals (symbols, icons, cultural referents) •Sound Effect •Exotic Association •Evocation •Sound Signal •Sound World

TAXONOMIES

Looking for Points of correspondence or equivalence

Orchestral EFFECTS
Blend
Blend Type
Augmentation
Emergence
Punctuation Blend
Textural Integration
Timbral Heterogeneity
Subtype
Static
Progressive
Dominating Instruments: -----, -----
Embellishing Instruments: -----, -----
Timbral Group 1: -----, -----
Timbral Group 2: -----, -----
Stratification
Subtype
Static
Progressive
Foreground contains: -----, -----
Middleground contains: -----, -----
Background contains: -----, -----
Segregation
Segregation
between: ----- and -----
Progressive
Progressive type
Timbral Modulation
Klangfrabenmelodie
General
Contrast
Contrast type
General
Antiphonal Contrasts
Timbral Echo
Timbral Shifts
Sectional Division
Contrast
between: ----- and -----
Gestures
Gesture type
Sudden Addition
Sudden Reduction
Gradual Addition
Gradual Reduction

PART-A

- 1- THE STUDY OF ORCHESTRATION AND THE COMPREHENSION OF ITS NATURE AND MECHANISMS
- 2- TOOLS ONE CAN DREAM OF: An Orchestra in each classroom ?
- 3- THE MORE DOWN-TO-EARTH REALITY: The hopes raised by the new multitrack recording technologies
- 4- AN ALTERNATIVE? The standard "out-of-the-box" SIMULATION TECHNIQUES: MIDI protocol and sound sampling banks; Notation software
- 5- But... "All my students are using music notation programs with rendering software"...
- 6- Let's sum it up: If a software is needed... then a good one should be provided, a software that you can learn with and that we could name the *"best possible substitute for a live orchestra"* ...
- 7- THE CHALLENGE: What can a "best possible substitute for a live orchestra" be... What must it be able to do?
- 8- The TOOLS needed:
 - 1• A reliable, flexible PRODUCTION SYTEM to generate true multi-track files with maximum "realism"
Renderings should be literally indistinguishable from a live orchestra and enable different interpretations with controllable parameters
 - 2• A simple but very efficient multi-track file PLAYER
- 9- The PROPOSAL:
- 10- ORCHSIM
- 11- ORCHPLAY

PART-B (Contribution to Research)

- DESCRIBING and COMMUNICATING: Developping a TAXONOMY; two angles of approach are being developed:
- 12- from the PERCEPTUAL perspective: the orchestral EFFECTS > ORCH.A.R.D. Taxonomy
 - 13- from the TRADITIONAL perspective: the ROLES of Instruments > OrchPlay Taxonomy
- orchestral TECHNIQUES

PART-C (Contribution to Research)

- 14- ORCHSIM within the Orchestration & Perception Project
- 15- ORCHPLAY within the Orchestration & Perception Project

14- ORCHSIM within the Orchestration & Perception Project .1

Uses and Advantages

a. OrchSim produces **NORMALIZED renderings**:

- All pieces interpreted in OrchSim sound as if played by the SAME ORCHESTRA in the SAME HALL.
- All instruments keep the same dynamic range.
- All instruments keep the same position on the virtual stage.
 - **The role of each instrument, section of family can be compared and analysed between different pieces, with the assurance that all parameters remain the same.**

b. OrchSim enables **DIFFERENT INTERPRETATIONS** within the capabilities of the same orchestra.

- All parameters of an interpretation can be isolated, the others remaining the same.
 - **This enables specific comparisons, per parameter.**

c. **RE-ORCHESTRATIONS**

- **Different ORCHESTRATIONS of the same piece can be produced**, according to specific criterias.
- One could, for ex., “extend” or “narrow” the orchestral palette of an excerpt to study its impact on the perception of form or on the emotional response of the listener.
 - **All RE-ORCHESTRATIONS can be studied in parallel, providing direct A-B comparisons with the possibility of isolating instruments or groups as well as parameters.**

d. **Re-orchestrators** can produce **documents in any format**:

- manuscript
- music notation digitized documents (Finale, Sibelius or others): The documents can be transferred in music xml format and imported in Finale OrchSim scripted Template.
- directly in Finale OrchSim scripted Template.

14- ORCHSIM within the Orchestration & Perception Project .2

Uses and Advantages

Examples of the work done and in progress

1. INTERPRETATION and RENDERING in multi-channel of the **95 representative orchestral movements**

of the ORCH.A.R.D. database (*from classical to contemporary through romantic and modern – list in progress*)

- Many excerpts of the pieces have already been done. The plan is to produce all 95 pieces in full.
- Different Orchestral EFFECTS have been selected by the Orchestration & Perception Team to **create perceptual tests and validate effects and their salience.**

>> **LIST of pieces ORCH.A.R.D. (in progress)**

2. INTERPRETATION and RENDERING in multi-channel of a large selection of complementary pieces of the repertoire (370 full movements are planned, 118 excerpts are done)

>> **LIST of pieces OrchSim/OrchPlay (in progress)**

3. RE-ORCHESTRATIONS

- Several re-Orchestrations have already been done. They have been used by Meghan Goodchild for her PhD Thesis.
- In the planning (example):
Rimsky Shéhérazade (Cordero - **hem**, Genève) > For the study of MASKING EFFECT

...

14- ORCHSIM within the Orchestration & Perception Project .3

Uses and Advantages

LIST of pieces ORCH.A.R.D. (in progress)

Composer lastname	Composer firstname	Composer dates	Title	Catalog number	Nickname	Mvt	Movement name												
Mozart	W. Amadeus	1756-1791	Don Giovanni	K. 527			Overture	Mahler	Gustav	1860-1911	Symphony 1		Titan	I	Langsam. Schleppend				
Haydn	Joseph	1732-1809	Symphony 94		Surprise	I		Mahler	Gustav	1860-1911	Symphony 1		Titan	II	Kräftig bewegt, doch nicht zu Schnell				
Haydn	Joseph	1732-1809	Symphony 94		Surprise	II													
Haydn	Joseph	1732-1809	Symphony 94		Surprise	III		Mahler	Gustav	1860-1911	Symphony 1		Titan	III	Feierlich und gemessen, ohne zu schleppen				
Haydn	Joseph	1732-1809	Symphony 94		Surprise	IV		Mahler	Gustav	1860-1911	Symphony 1		Titan	IV	Stürmisch bewegt				
Haydn	Joseph	1732-1809	Symphony 100	Hob:1:100	Military	I													
Haydn	Joseph	1732-1809	Symphony 100	Hob:1:100	Military	II		Mahler	Gustav	1860-1911	Symphony 2			I	Allegro maestoso. Mit durchaus erstem und feierlichem Ausdruck				
Haydn	Joseph	1732-1809	Symphony 100	Hob:1:100	Military	III													
Haydn	Joseph	1732-1809	Symphony 100	Hob:1:100	Military	IV													
Beethoven	Ludwig van	1770-1827	Fidelio	Op. 72			Overture	Mahler	Gustav	1860-1911	Symphony 2			II	Andante moderato. Sehr gemächlich. Nie eilen.				
Beethoven	Ludwig van	1770-1827	Symphony 5	Op. 67		I		Mahler	Gustav	1860-1911	Symphony 2			III	In ruhig fließender Bewegung				
Beethoven	Ludwig van	1770-1827	Symphony 5	Op. 67		II		Sibelius	Jean	1865-1957	Symphony 2	Op. 43		I					
Beethoven	Ludwig van	1770-1827	Egmont	Op. 84			Overture	Sibelius	Jean	1865-1957	Symphony 2	Op. 43		II					
Beethoven	Ludwig van	1770-1827	Symphony 7	Op. 92		I		Sibelius	Jean	1865-1957	Symphony 2	Op. 43		III					
Beethoven	Ludwig van	1770-1827	Symphony 7	Op. 92		II		Sibelius	Jean	1865-1957	Symphony 2	Op. 43		IV					
Beethoven	Ludwig van	1770-1827	Symphony 7	Op. 92		III		d'Indy	Vincent	1851-1931	Choral Varie	Op. 55							
Beethoven	Ludwig van	1770-1827	Symphony 7	Op. 92		IV		Debussy	Claude	1862-1918	La Mer	L109		I	De L'Aube À Midi Sur La Mer				
Beethoven	Ludwig van	1770-1827	Symphony 7	Op. 92				Debussy	Claude	1862-1918	La Mer	L109		II	Jeux de vagues				
Schubert	Franz	1797-1828	Symphony 8	D. 759	Unfinished	I		Debussy	Claude	1862-1918	La Mer	L109		III	Dialogue du vent et de la mer				
Schubert	Franz	1797-1828	Symphony 8	D. 759	Unfinished	II													
Schubert	Franz	1797-1828	Symphony 9	D. 944	The Great	I	Andante – Allegro, ma non troppo – Più moto	Holst	Gustav	1874-1934	First Suite in E flat for military band	Op. 28 No. 1		I	Chaconne				
Schubert	Franz	1797-1828	Symphony 9	D. 944	The Great	II	Andante con moto	Holst	Gustav	1874-1934	First Suite in E flat for military band	Op. 28 No. 1		II	Intermezzo				
Schubert	Franz	1797-1828	Symphony 9	D. 944	The Great	III	Scherzo. Allegro vivace – Trio												
Schubert	Franz	1797-1828	Symphony 9	D. 944	The Great	IV	Allegro vivace	Holst	Gustav	1874-1934	First Suite in E flat for military band	Op. 28 No. 1		III	March				
Berlioz	Hector	1803-1869	Symphonie Fantastique	Op. 14		I	Reveries - Passions	Debussy	Claude	1862-1918	Images			I	Gigues				
Berlioz	Hector	1803-1869	Symphonie Fantastique	Op. 14		II	Un Bal: Valse												
Berlioz	Hector	1803-1869	Symphonie Fantastique	Op. 14		III	Scene aux champs	Vaughan Williams	Ralph	1872-1958	The Lark Ascending								
Berlioz	Hector	1803-1869	Symphonie Fantastique	Op. 14		IV	Marche au supplice	Nielsen	Carl	1865-1931	Symphony 6	FS 116	Sinfonia semplice	I					
Berlioz	Hector	1803-1869	Symphonie Fantastique	Op. 14		V	Songe d'une nuit de Sabbat												
Mendelssohn	Felix	1809-1847	Symphony 3	Op. 56	Scottish	I	Andante con moto - Allegro un poco agitato	Nielsen	Carl	1865-1931	Symphony 6	FS 116	S, semplece	II					
Mendelssohn	Felix	1809-1847	Symphony 3	Op. 56	Scottish	II	Vivace non troppo	Nielsen	Carl	1865-1931	Symphony 6	FS 116	S, semplece	III					
Mendelssohn	Felix	1809-1847	Symphony 3	Op. 56	Scottish	III	Adagio	Nielsen	Carl	1865-1931	Symphony 6	FS 116	S, semplece	IV					
Mendelssohn	Felix	1809-1847	Symphony 3	Op. 56	Scottish	IV	Allegro vivacissimo - Allegro maestoso assai	Mussorgsky	Modest	1839-1881	Pictures at an Exhibition				1 Promenade 1				
Verdi	Giuseppe	1813-1903	Rigoletto				Prelude	Mussorgsky	Modest	1839-1881	Pictures at an Exhibition				2 Gnomus				
Verdi	Giuseppe	1813-1902	La Traviata				Prelude	Mussorgsky	Modest	1839-1881	Pictures at an Exhibition				3 Promenade 2				
Rimsky-Korsakov	Nicolai	1844-1908	Overture on Three Russian Themes	Op. 28				Mussorgsky	Modest	1839-1881	Pictures at an Exhibition				4 The Old Castle				
Verdi	Giuseppe	1813-1901	Aida				Danza di piccoli schiavi mori	Mussorgsky	Modest	1839-1881	Pictures at an Exhibition				5 Promenade 3				
Bizet	Georges	1838-1875	Carmen				Prelude	Mussorgsky	Modest	1839-1881	Pictures at an Exhibition				6 Tuileries				
Borodin	Alexander	1833-1887	In The Steppes of Central Asia					Mussorgsky	Modest	1839-1881	Pictures at an Exhibition				7 Bydlo				
Smetana	Bedřich	1824-1884	Ma Vlast			II	Die Moldau	Mussorgsky	Modest	1839-1881	Pictures at an Exhibition				8 Promenade 4				
Bruckner	Anton	1824-1896	Symphony 6			I		Mussorgsky	Modest	1839-1881	Pictures at an Exhibition				9 Ballet of the Unhatched Chicks in their Shells				
Bruckner	Anton	1824-1896	Symphony 6			II		Mussorgsky	Modest	1839-1881	Pictures at an Exhibition				10 Samuel Goldenberg & Schmuyle				
Brahms	Johannes	1824-1896	Symphony 4	Op. 98		I	Allegro non troppo	Mussorgsky	Modest	1839-1881	Pictures at an Exhibition				11 The Marketplace at Limoges				
Brahms	Johannes	1833-1897	Symphony 4	Op. 98		II	Andante moderato	Mussorgsky	Modest	1839-1881	Pictures at an Exhibition				12 Catacombs				
Brahms	Johannes	1833-1897	Symphony 4	Op. 98		III	Allegro giocoso	Mussorgsky	Modest	1839-1881	Pictures at an Exhibition				13 Cum Mortuis In Lingua Mortua				
Brahms	Johannes	1833-1897	Symphony 4	Op. 98		IV	Allegro energico e passionato	Mussorgsky	Modest	1839-1881	Pictures at an Exhibition				14 The Hut on Fowls' Legs (Baba Yaga)				
Smetana	Bedřich	1824-1884	The Bartered Bride				Overture	Vaughan Williams	Ralph	1872-1958	Symphony 8			I					
								Vaughan Williams	Ralph	1872-1958	Symphony 8			II					
								Vaughan Williams	Ralph	1872-1958	Symphony 8			IV					
								Ticheli	Frank	1958-	Symphony 2			I	Shooting Stars				
								Ticheli	Frank	1958-	Symphony 2			II	Dreams Under a New Moon				
								Ticheli	Frank	1958-	Symphony 2			III	Apollo Unleashed				

14- ORCHSIM within the Orchestration & Perception Project .4

Uses and Advantages

LIST of pieces OrchSim/OrchPlay (in progress) -1

Composers Count	Pieces Count	composer	year	period_en	form_en	score_orchestration_en	piece_file_name	Part/Section (Bars)	Complete (Bars to do)	mes. #	Original Score pdf	Total Dur min	Total Dur sec	duration	instrumentation_comp_lete_en	instrumentation_exc_erp_en	num_parts	Note entry	Inter-pretation	STATUS ready	Revision	final	Pr 1 TO DO	Pr 2 TO DO	Pr 3 TO DO	Pr 4 TO DO	Pr 5 TO DO	
total 79	total 370	Type	Type	Select or Type (combinatic)	Select or Type (combinations possible)	Select	[Composer_PIECE_MVT-SECTION(mes)]	Type	total 24	total 4831	total 374	185'	43"	185' 43"	Select		Type	Type	Type	total 129	total 128	total 115	28	29	27	30	11	
ready / to be VERIFIED									Type	1	Type	Type	(total)	COUNT: -all independent voices, string divisi if substantial -pno, harp, kb as 2 (more if complex)				SHOW	General >	total 100 (PRO)	1	2	3	4	5			
FINAL /notes+optimized LAYOUT and MIDI version.									'98	'7	'5		COUNT: ADD ' before nrs. NOT to be counted				Evaluation ORCH >	total 15 (teacher)										
READY for OrchPlay (mc)																												
music entries available Finale (rough note entries only)																												
FINAL notes entries + optimized LAYOUT only (incomplete)																												
TO ENTER / planned																												



(Write years in full; Ex: 1801-1802)

21.07.2017

Composers Count	Pieces Count
total 79	total 370

- Gabrieli, Giovanni (1553-1612)
- Monteverdi (1567-1643)
- Vivaldi (1678-1741)
- Bach, J Sebastian (1685-1750)
- Händel (1685-1759)
- Stamitz, Johann (1717-1757)
- Haydn (1732-1809)
- Mozart (1756-1791)
- Beethoven (1770-1827)
- Rossini (1792-1868)
- Schubert (1797-1828)
- Berlioz (1803-1869)
- Mendelssohn (1809-1847)
- Chopin (1810-1848)
- Schumann (1810-1856)
- Liszt (1811-1886)
- Wagner (1813-1883)
- Verdi (1813-1901)
- Franck (1822-1890)
- Smetana (1824-1884)
- Bruckner (1824-1896)
- Strauss, Johann II (1825-1899)
- Borodine (1833-1887)
- Brahms (1833-1897)
- Bizet (1838-1875)
- Moussorgsky (1839-1881)
- Tchaikovsky (1840-1893)
- Chabrier (1841-1894)
- Dvorak (1841-1904)
- Grieg (1843-1907)

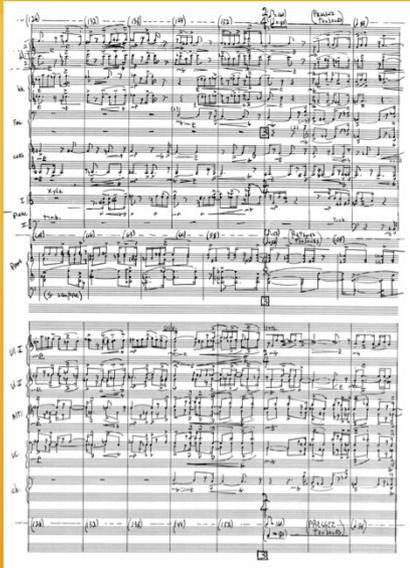
- Rimsky-Korsakov (1844-1908)
- D'Indy (1851-1931)
- Janáček (1854-1928)
- Mahler (1860-1911)
- Debussy (1862-1918)
- Strauss, Richard (1864-1949)
- Nielsen, Carl (1865-1931)
- Dukas, Paul (1865-1935)
- Sibelius (1865-1957)
- Koehlin (1867-1950)
- Joplin, Scott (1867-1917)
- Scriabin (1872-1915)
- Vaughan Williams (1872-1958)
- Rachmaninoff (1873-1943)
- Holst (1874-1934)
- Schönberg (1874-1951)
- Ives (1874-1954)
- Ravel (1875-1937)
- Bartok (1881-1945)
- Stravinsky (1882-1971)
- Webern (1883-1945)
- Varèse (1883-1965)
- Berg (1885-1935)
- Villa-Lobos (1887-1959)
- Prokofiev (1891-1953)
- Hindemith (1895-1963)
- Gershwin (1898-1937)
- Antheil (1900-1959)
- Copland (1900-1990)
- Shostakovich (1906-75)

- Scelsi (1905-88)
- Messiaen (1908-1992)
- Barber (1910-1981)
- Cage (1912-1992)
- Britten (1913-1976)
- Lutosławski (1913-1994)
- Dutilleux (1916-2013)
- Bernstein (1918-1990)
- Ligeti (1923-2006)
- Berio (1925-2003)
- Takemitsu (1930-96)
- Nørgård (1932)
- Reich, Steve (1936)
- Silvestrov, Valentin (1937)
- Andriessen, Louis (1939)
- Thoresen, Lasse (1949)
- Raskatov, Alexander (1953)

STATUS ready	Revision	final
total 129	total 128	total 115

Orchestration / re-Orchestration: 1- Note-Entry

Manuscript



Note-Entry



Notation program



music xml

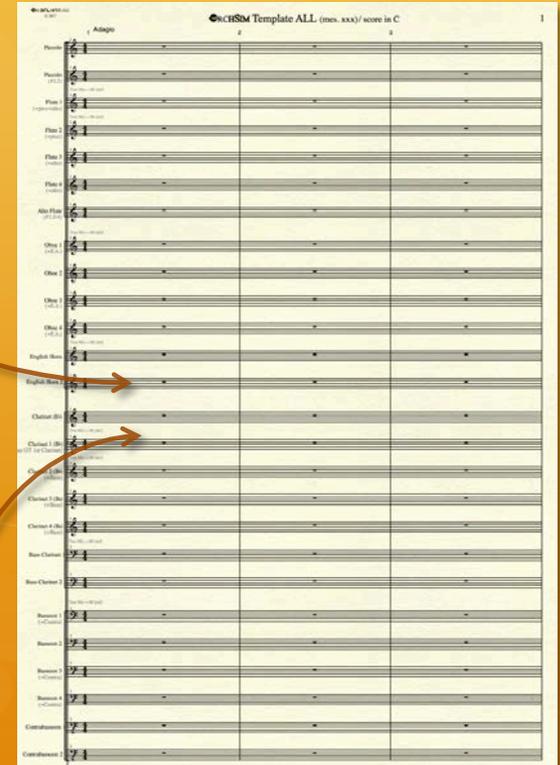
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<note default-x="26">  
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  <pitch>  
    .....
```



Note-Entry
Verification
and
normalization

Re-orchestrations are a key practice to
1- Evaluate different research hypothesis
2- Acquire skills

OrchSim_TEMPLATE_Finale scripted_v2.5



Orchestration / re-Orchestration: 2- Interpretation

Mozart_DonGiovanni_Overture(1-39)

OrchSim
Finale scripted SCORE

OrchPLAYMUSIC © 2016

Andante Mozart, DonGiovanni, Overture [284 mes.] / Score in C 1



OrchPLAYMUSIC © 2016

Andante Mozart, DonGiovanni, Overture [284 mes.] / Score in C 1

Orchestration / re-Orchestration: 2- Interpretation

Mozart_DonGiovanni_Overture(1-39)

OrchSim
INTERPRETED SCORE

The image displays a page of a musical score for the Overture from Mozart's Don Giovanni, interpreted by OrchSim. The score is arranged in a standard orchestral format with the following parts and markings:

- Trumpet 1 (D):** Includes performance instructions: "Cr", "Leg OFF", "XI Timbral ON", and "XI Timbral OFF".
- Trumpet 2 (D):** Includes performance instructions: "Cr", "Leg OFF", "XI Timbral ON", and "XI Timbral OFF".
- Timpani:** Includes performance instructions: "Cr" and "Leg OFF".
- Violins I & II:** Marked "Andante" and "f". Includes performance instructions: "Leg OFF", "Port FAST (40)", "norm AT (30)", "XI Timbral OFF", and "Bow AT Noise heavy".
- Violas:** Includes performance instructions: "Leg OFF", "Port FAST (40)", "norm AT (30)", "XI Timbral OFF", and "Bow AT Noise heavy".
- Violoncellos:** Includes performance instructions: "Cr", "Leg OFF", "Port FAST (40)", "norm AT (30)", "XI Timbral OFF", and "Bow AT Noise very heavy".
- Double Basses:** Includes performance instructions: "Cr", "Leg OFF", "Port FAST (40)", "norm AT (30)", "XI Timbral OFF", and "Bow AT Noise very heavy".

The score features various dynamic markings such as *f* (forte) and *p* (piano), and articulation markings like "Leg OFF" and "Port FAST". Performance instructions for the strings include "Bow AT Noise" with varying degrees of heaviness or lightness. The score is presented in a clean, black-and-white format with a white background.

WORK FLOW 14- ORCHSIM within the O & P Project ·15

Orchestration / re-Orchestration: 3- Rendering

OrchSim INTERPRETED SCORE

Musical score for Mozart, Don Giovanni, Overture [284 mes.] / Score in C. The score is for an interpreted score and includes parts for Flute 1 & 2, Oboe 1 & 2, Clarinet 1 & 2 (A & B), Bassoon 1 & 2, Horn 1 (D), Horn 2 (D), Trumpet 1 (D), Trumpet 2 (D), Timpani, Violin I, Violin II, Viola, and Violoncello. The score is marked 'Andante' and includes performance instructions such as 'Breath noise (very soft)', 'Lag ON', and 'Port F&B (40)'. The score is numbered 1 through 8.



Screenshot of the OrchSim software interface showing multiple tracks for various instruments. The interface is divided into several sections, each corresponding to a different instrument or group of instruments. The tracks are labeled with instrument names and track numbers, such as 'Flute 1', 'Oboe 1', 'Clarinet 1 (A)', 'Bassoon 1', 'Horn 1 (D)', 'Trumpet 1 (D)', 'Violin I Solo 1', and 'Violin II Solo 1'. Each track has a volume knob and a mute button. The interface also shows the 'OrchSim' logo and the 'OchPlayMusic' logo. The tracks are arranged in a grid, with each track having its own set of controls and a small waveform display at the bottom.

Re-ORCHESTRATIONS

- Several re-Orchestrations have already been done. They have been used by Meghan Goodchild for her PhD Thesis.
For ex.:

Orchestral Gestures: Music-Theoretical Perspectives and Emotional Responses

Meghan Goodchild

Schulich School of Music

McGill University, Montreal

April 2016

A thesis submitted to McGill University in partial fulfillment of the requirements of the degree of

Doctor of Philosophy in Music Theory



Goodchild_2016_PhDThesis APPENDIX C.pdf

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Re-ORCHESTRATIONS

1. DEBUSSY, LA MER, MM. 122-141: BRIGHT VERSION



APPENDIX C..... 275

BRIGHTENING AND DARKENING REORCHESTRATIONS.....275

1. DEBUSSY, LA MER, MM. 122-141: BRIGHT VERSION.....276

This page of the musical score covers measures 122 to 141. It features a full orchestral arrangement with parts for Flute 1 & 2, Piccolo, Oboe 1 & 2, English Horn, Clarinet 1 & 2, Bassoon 1 & 2, Horn 1-4, Trumpet 1-3, Trombone 1-3, Tuba, Percussion 1-3, Triangle, Harp 1 & 2, Violin I & II, Viola I & II, Cello, Double Bass, and Double Bass Drum. The score includes dynamic markings such as *pp*, *ppp*, and *ppp* with *arco* or *arco* markings. A 'Tritis modéré' section is marked with a tempo of $\text{♩} = 104$, and a 'Ritenu' section begins at measure 130. The key signature has one flat, and the time signature is 3/4.

This page of the musical score continues from the first page, covering measures 122 to 141. It features a full orchestral arrangement with parts for Flute 1 & 2, Piccolo, Oboe 1 & 2, English Horn, Clarinet 1 & 2, Bassoon 1 & 2, Horn 1-4, Trumpet 1-3, Trombone 1-3, Tuba, Percussion 1-3, Triangle, Harp 1 & 2, Violin I & II, Viola I & II, Cello, Double Bass, and Double Bass Drum. The score includes dynamic markings such as *pp*, *ppp*, and *ppp* with *arco* or *arco* markings. A 'Tritis modéré' section is marked with a tempo of $\text{♩} = 104$, and a 'Ritenu' section begins at measure 130. The key signature has one flat, and the time signature is 3/4.

Re-ORCHESTRATIONS

APPENDIX C..... 275
BRIGHTENING AND DARKENING REORCHESTRATIONS.....275
1. DEBUSSY, L4 MER, MM. 122-141: BRIGHT VERSION.....276

The image displays a page of a musical score for Debussy's 'Mer' (Bright Version), measures 122-141. The score is written for a large orchestra, including woodwinds, brass, strings, and harp. The page is numbered '3' in the top right corner. The score is divided into systems, with measures 122-131, 132-141, and 142-151. The score includes various musical notations such as notes, rests, dynamics (e.g., *ppp*, *f*), and performance instructions like 'Ritardando' and 'a Tempo'. The harp part features a prominent glissando effect. The score is presented in a clear, professional layout with a white background and black notation.

14- ORCHSIM within the Orchestration & Perception Project .21

Re-ORCHESTRATIONS

2. DEBUSSY, *LA MER*, MM. 122-141: DARK VERSION



APPENDIX C..... 275

BRIGHTENING AND DARKENING REORCHESTRATIONS..... 275

2. DEBUSSY, *LA MER*, MM. 122-141: DARK VERSION..... 279

Re-ORCHESTRATIONS

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BRIGHTENING AND DARKENING REORCHESTRATIONS.....	275
2. DEBUSSY, <i>L'AMER</i> , MM. 122-141: DARK VERSION.....	279

The image displays a page of a musical score for Debussy's *L'Amour*, measures 122-141, in a 'Dark Version'. The score is a full orchestration, featuring multiple staves for various instruments. The instruments listed on the left include Flute 1 & 2, Oboe 1 & 2, Clarinet 1 & 2, Bassoon 1 & 2, Horn 1-4, Trumpet 1-3, Trombone 1-3, Tuba, Percussion 1 & 2, Harp, and Violin/Viola/Varco. The score includes dynamic markings such as *rit.* (ritardando) and *a Tempo*. The page number '3' is visible in the top right corner of the score area.

Re-ORCHESTRATIONS (in progress)

- In the planning (MULTICHANNEL VERSION of Re-orchestration example by Victor Cordero – **hem** Genève):
 - Rimsky Shéhérazade > For the study of **MASKING EFFECT**
 - COMPARISON Shéhérazade (Rimsky-Korsakov) with Shéhérazade (Ravel)

Re-ORCHESTRATIONS (some ideas for comparative study)

- Timbral **Transformations** (sudden/gradual):
 - “brighter”
 - “darker”
- Timbral **Reductions** (sudden/gradual):
 - Polychromatic large to Polychromatic narrow
 - Polychromatic to Monochromatic
- Timbral **Augmentations** (sudden/gradual):
 - Polychromatic narrow to Polychromatic large
 - Monochromatic to Polychromatic
- Timbral **Contrasts** (sudden/gradual):
 - Enhancement
 - Reduction
- Timbral **Stratification Interchanges**:
 - between Foreground, Middleground, Background
- Timbral / Acoustical “Effects”:
 - Masking effect
 - Salience evaluation
- Timbral **Concepts Study**:
 - “Volume”, “Body”
 - “Intensity”
- etc.

La Réorchestration pour l'étude de l'effet de masque (from Victor Cordero's IRCAM Presentation, Summer 2016)

La réorchestration :

Fonctions classiques :

Adaptation stylistique

(Haendel-Mozart, Bach-Mendelssohn)

- ▣ Réorchestration « corrective » (Beethoven-Mahler
Moussorgsky-Rimski-Korsakov)

Nouvelles applications :

- ▣ Méthode de recherche

- ▣ Outil pédagogique → Support de cours

L'effet de masque

Effet de masque : Un son (groupe de sons) est rendu inaudible ou brouillé par la présence simultanée d'un autre.

Le masquage comme effet négatif/positif

Ces éléments cachés, sont-ils superflus ?

Ont-ils une influence sur la surface audible ?

Passage réorchestré

Exemple choisi :

Nicolaï Rimski-Korsakov

Schéhérazade op. 35 (1888)

IV mouvement

A partir de l'*Allegro non troppo maestoso*

The image shows a page of a musical score, numbered 238. It contains multiple staves of music. The top section includes staves for strings (Violins I, Violins II, Violas, Cellos, Double Basses), woodwinds (Flutes, Oboes, Clarinets, Bassoons), and brass (Trumpets, Trombones). Below these are staves for Tr. (Trumpet), Piatti (Cymbals), and Arpa (Harp). The harp part includes the lyrics: (e - b, a - b, n - b, r - h) and (a - h, r - h, a - b). The bottom section features a piano part with markings like *vizz.* and *arco*. The tempo and meter are indicated at the bottom: **Alliegro non troppo maestoso** *d. = 60*.

Tutti version originale

Analyse de la surface masquée : section des cordes

- Somme de différents matériaux dans une seule surface cohérente. *Textural integration* (McAdams)
- Harmonie statique
- Brouillage rythmique (binaire-ternaire)
- Mouvements ondulatoires superposés décalés.
- Chevauchement des lignes

The image displays a musical score for a string section, consisting of five staves: Violon I, Violon II, Alto, Violoncelle, and Contrebasse. The music is written in 6/4 time and features a complex texture with overlapping melodic lines and rhythmic patterns. The score is divided into two systems. The first system includes dynamic markings of *sf* (sforzando) and *ff* (fortissimo), along with triplet markings (indicated by a '3' over the notes). The second system continues the texture with similar markings. Red curved lines are drawn across the staves, highlighting the overlapping and undulating melodic lines. A blue arrow points to the right above the score, indicating the direction of the music.

A detailed musical score for a string quartet and piano. The score is arranged in systems. The top system contains the four string staves (Violin I, Violin II, Viola, and Violoncello). The second system contains the Tr. (Trumpet), Piatti (Percussion), and Arpa (Harp) parts. The third system contains the piano part, including the right and left hands. The score includes various musical notations such as notes, rests, slurs, and dynamic markings. The tempo and meter are indicated at the bottom.

Alliegro non troppo maestoso *d.* = 60

Cordes
Version originale

Tr.
Pia.
Arpa
vix. arco
pizz.
pizz.

(a - b, a - b, a - b, r - h) (a - h, r - h, a - b)

Alliegro non troppo maestoso $\text{♩} = 60$

Tutti version originale

Combien souvent nous avons constaté –à la vue- que les bois ne restaient pas silencieux tandis qu'ils nous était impossible d'en percevoir nettement aucun son ! Vous répondrez en arguant des sonorités de second plan dont j'ai parlé ; vous ajouteriez même que ces bois, si notre oreille ne les distingue pas du reste, leur rôle dans l'ensemble agit utilement ; et que s'ils n'étaient point là les sonorités seraient tout autres.

(Koechlin, Traité de l'orchestration)

Question : Quel est l'apport des cordes aux résultat global ?

Méthode : la réorchestration

Hypothèse : Le masquage rend le détail superflu

Réorchestration proposée

Musical score for Violoncelle and Contrebasse. The Violoncelle part features a triplet of eighth notes, which is highlighted with a blue box. The Contrebasse part also features a triplet of eighth notes. The score is in 6/4 time and includes dynamic markings *sf* and *ff*.

Musical score for Violoncelle and Contrebasse. The Violoncelle part features a triplet of eighth notes, which is highlighted with a blue box. The Contrebasse part also features a triplet of eighth notes. The score is in 6/4 time and includes dynamic markings *sf* and *ff*. Blue vertical lines and arrows indicate the proposed reorchestration, showing the Violoncelle part being reworked into a series of eighth notes and the Contrebasse part being reworked into a series of eighth notes.

The musical score is arranged in a standard orchestral format. The woodwind section includes Piccolo, Flute 1 and 2, Oboe 1 and 2, Clarinet in E-flat 1 and 2, Bassoon 1 and 2, and Contrabassoon. The brass section consists of Horns in F (1, 2, 3, 4), Trumpets in B-flat (1, 2), Trombones (1, 2, Bass), and Tuba. The percussion section includes Timbales, Triangle, Tambourin, Tamburo, Piatti, and G.C. The string section includes Violin I and II, Viola, Violoncello, and Contrebasse. The score is written in 6/8 time and features a dynamic marking of *ff* (fortissimo) throughout. The woodwinds and brass play sustained notes, while the strings play a rhythmic pattern of eighth notes with triplets.

Tutti, version réorchestrée

Pistes pour le travail avec les étudiants

Comparaison auditive des deux orchestrations. Evaluer les différences perceptives et les mettre en rapport avec le texte.

Travail sur le rapport complexité d'écriture-perception. Comment sont-elles liées ?

Dimension gestuelle. L'orchestration ne peut pas seulement être analysée à « l'aveugle ». La musique c'est aussi « geste » scénique. L'élément masqué peut aussi être « thématized » par le geste.

L'audition est influencée par la lecture de la partition.

Du Schéhérazade de Rimski-Korsakov au Schéhérazade de Maurice Ravel

■ Comparaison avec Shéhérazade de Rimski-Korsakov

I. Asie chiffre 15

Schéhérazade (1903) Trois poèmes pour voix et orchestre sur des vers de Tristan Klingsor.

I. Asie

II. La Flûte enchantée

III. L'indifférent

Parallélismes entre les deux versions

Lent $\text{♩} = 40$

ff Unis Div. Unis

ff Unis pizz. arco

ff Unis Div. Div.

ff

sf ff Unis

Allegro non troppo maestoso $\text{♩} = 60$

2 Harpes

f glissando 8₁

Div. *mf* subito *ff* Unis *f* Div. *mp* subito *f*

Div. *mf* subito *ff* Unis *f* Div. *mp* subito *f*

ff pizz. Div. arco Unis *mp* subito Div. pizz. *f*

mf subito *ff* pizz. arco *f* *mp* subito *f* pizz.

mf subito *ff* *mp* subito *f*

Detailed description: This is a page of a musical score for two harps. The top staff is labeled '2 Harpes' and features a glissando marked 'f' with an 8₁ fingering. Below are four staves of music. The first two staves have 'Div.' markings and dynamic changes from 'mf subito' to 'ff'. The third and fourth staves have 'pizz.' and 'arco' markings. A blue square highlights a section in the third staff, and red lines connect it to corresponding sections in the other staves. The score includes various dynamics like 'mp subito' and 'f', and 'Unis' markings.

Arpa

f gliss. 8 (F-#, h-b) simile 8 (e-b)

pizz. simile

Detailed description: This is a page of a musical score for an arpa (harp). The top staff is labeled 'Arpa' and features a glissando marked 'f' with an 8₁ fingering. Below are three staves of music. The first staff has 'gliss.' and '8' markings, with notes labeled '(F-#, h-b)' and '(e-b)'. The second and third staves have 'pizz.' and 'simile' markings. A blue square highlights a section in the second staff, and red lines connect it to corresponding sections in the other staves. The score includes dynamics like 'f' and 'pizz.', and 'simile' markings.

Re-ORCHESTRATIONS (in progress)

- In the planning (MULTICHANNEL VERSION of Re-orchestration example by Victor Cordero – hem Genève):
 - Rimsky Shéhérazade > For the study of **MASKING EFFECT**
 - **COMPARISON** Shéhérazade (Rimsky-Korsakov) with Shéhérazade (Ravel)

Re-ORCHESTRATIONS (some ideas for comparative study)

- Timbral **Transformations** (sudden/gradual):
 - “brighter”
 - “darker”
- Timbral **Reductions** (sudden/gradual):
 - Polychromatic large to Polychromatic narrow
 - Polychromatic to Monochromatic
- Timbral **Augmentations** (sudden/gradual):
 - Polychromatic narrow to Polychromatic large
 - Monochromatic to Polychromatic
- Timbral **Contrasts** (sudden/gradual):
 - Enhancement
 - Reduction
- Timbral **Stratification Interchanges**:
 - between Foreground, Middleground, Background
- Timbral / **Acoustical “Effects”**:
 - Masking effect
 - Salience evaluation
- Timbral **Concepts Study**:
 - “Volume”, “Body”
 - “Intensity”
- etc.

15- ORCHPLAY within the Orchestration & Perception Project .1

Uses and Advantages

a. RESEARCH

- **SELECT** any instrument or any instrumental **COMBINATION**.
- TRY-OUT and PREPARE **COMBINATIONS** representing orchestral **TECHNIQUES** or **EFFECTS** for analysis.
- re-**BALANCE** instruments, sections or families.
- **EXPERIMENT** with several possible instrumental balance mixes: Bring out the basses and trombones, increase the presence of the viola section inner voices, remove an instrument, etc.
- **SAVE** your instrumental selections and balance settings as **BOOKMARKS** for rapid comparisons.
- **SAVE** related bookmarks to **BOOKMARKS LISTS**.
- **EXPORT BOOKMARKS LISTS** and **SHARE** your analytical work with the international ORCH.A.R.D./OrchPlay user community.
- **EXPORT** selected bookmarks as **STEREO AUDIO FILES** for study into other softwares: spectrum analyzers, visualizers, sonograms, temporal frequency analysis, Fast Fourier Transform, etc.

b. TEACH - LECTURE

- Prepare your **CLASSES** and **LECTURES** with **BOOKMARKS** and **Bookmark LISTS**.
- Use included **PRINT-READY SCORES** inC and piano reductions for **CLASSWORKS**, assignments and exams.
- **EMBED** and display any other **PERTINENT DOCUMENTS**: presentations, analysis, graphs, etc.
- **IMPORT** your reference **stereo RECORDINGS** in OrchPlay, bookmark audio regions, attach your notes and add your comments.
- **PREPARE** Audio **QUIZZES** for your class.
- Prepare and Share **BOOKMARKS LISTS** with your students as **LISTENING ASSIGNMENTS**.
- PREPARE "**ORCHESTRAL DICTATIONS**" for your students : Select solo instruments (easier) or combinations within a larger context (more advanced).

c. LINKING ORCH.A.R.D. Orchestral EFFECTS with Orchestral TECHNIQUES in OrchPlay

Original
Original Score (printed or manuscript)
Analyzed and ANNOTATED

QuickTime
Original Stereo Reference Recording
(mp3 or full/lossless format)

ORCHSIM
Score entered in Orchestration template
and interpreted

ORCHPLAY
OrchPlay True Multitrack Recording
(DPL lossless format)

Rendering and Encoding →

Integration ORCHARD/OrchPlay

Recordings: Stereo	OrchPlay Multichannel
Taxonomy: Orch EFFECTS	Instr. ROLES Orch. TECHNIQUES

(see following page)

ORCHARD "Orchestral EFFECT" ANALYSIS Example
Blend Detail
Static Augmentation (BLE462)

Work : Ralph Vaughan Williams - Symphony 8 - IV
Measures : 12 - 14
Time : 00:00:14 - 00:00:18
Strength : 3
Score pages : 63 to 63
PDF pages : 2 to 2

AUDIO control: STEREO Reference recording

• TUTTI

• Dominating Instruments: violin 1, violin 2, viola, cello, bass

• Embellishing Instruments: picc 1, flute 1, oboe 1, oboe 2, clarinet 1, clarinet 2, bassoon 1, bassoon 2, horn 1, horn 2, trumpet 1, trumpet 2, trombone 1, trombone 2, trombone 3

Notes : augmentation of strings

Recording Info: London Philharmonic Orchestra, Adrian Boult, Warner Records



ORCHARD "Orchestral EFFECT" ANALYSIS Example
Blend Detail
Static Augmentation (BLE462)

Work : VaughanWilliams_Symph8_iv(12-25, 54-96)_ORCH
Measures : 12 - 14
Time : 00:00:02 - 00:00:06
Strength : 3
Score pages : 1 to 1
PDF pages : 1 to 1

AUDIO control: True MULTICHANNEL recording

• TUTTI

• Dominating Instruments: violin 1, violin 2, viola, cello, bass

• Embellishing Instruments: picc 1, flute 1, oboe 1, oboe 2, clarinet 1, clarinet 2, bassoon 1, bassoon 2, horn 1, horn 2, trumpet 1, trumpet 2, trombone 1, trombone 2, trombone 3

Notes : augmentation of strings

• Sustaining, "dramatization" Instruments: timpani, bass drum

Any other combination possible

Recording Info: Orchestration version 1.1 (Winter 2017)

ORCHPLAY Music Library

OrchPlay Bookmarking system

- Bookmarks (examples)
- BLE462-0 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.12-14] Picc 1+Fl 1+Ob 1+Ob 2+Cl 1+Cl 2+Bsn 1+Bsn 2+Hn 1+Hn 2+Tpt 1+Tpt 2+Tbn 1+Tbn 2+Tbn 3+Timp 1+Perc 1+Perc 2+Perc 5+Perc 6+Harp 1+Harp 2+VI I+VI II+Vla+Vc+Db (Timpani+Bass Drum+Glockenspiel+Tubular Bells+Gongs (tuned)) >TUTTI
 - BLE462-1 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.12-14] VI I+VI II+Vla+Vc+Db {}>Foreground STR and Middleground STR
 - BLE462-2 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.12-14] Picc 1+Fl 1+Ob 1+Ob 2+Cl 1+Cl 2+Bsn 1+Bsn 2+Hn 1+Hn 2+Tpt 1+Tpt 2+Tbn 1+Tbn 2+Tbn 3 {}>Doubling Muti Oct Reinforce and Doubling Multi Oct Timbral
 - BLE462-3 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.14] Timp 1+Perc 1 (Timpani+Bass Drum)>Pedal PERC and Drama PERC
 - BLE462-x - - - - -
 - BLE462-x - - - - -

Explanation of Bookmark and FUNCTIONS in OrchPlay:

VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.12-14]	Picc 1+Fl 1+Ob 1+Ob 2+Cl 1+Cl 2+Bsn 1+Bsn 2+Hn 1+Hn 2+Tpt 1+Tpt 2+Tbn 1+Tbn 2+Tbn 3	(timpani+Bass Drum)	>Doubling Muti Oct Reinforce and Doubling Multi Oct Timbral
Selects and loads Audio file	Locates Audio position	Opens corresponding AUDIO channels	Perc instrum. playing
Selects and displays Score	Locates Score position	Redraws Score with only selected instruments	Instruments "ROLE" and "Orch TECHNIQUES"

15- ORCHPLAY within the Orchestration & Perception Project .3

LIST of TEST Examples (in progress)

Explanation of Bookmark and FUNCTIONs in OrchPlay:

VaughanWilliams_Symph8_iv(11-25, 54-96) [mes.12-14] Picc 1+Fl 1+Ob 1+Ob 2+Cl 1+Cl 2+Bsn 1+Bsn 2+Hn 1+Hn 2+Tpt 1+Tpt 2+Tbn 1+Tbn 2+Tbn 3 {timpani+Bass Drum} Perc instrum. playing >Doubling Muti Oct Reinforce and Doubling Multi Oct Timbral Instruments "ROLE" and "Orch TECHNIQUES"

Selects and loads Audio file Locates Audio position Opens corresponding AUDIO channels
Selects and displays Score Locates Score position Redraws Score with only selected instruments

LIST of EXAMPLES



OrchPlayLib-ORCHARD_integration TESTS 24_08_2017 domden.xlsx



OPML Orch Instruments ROLES Techniques_Bookmarks 24_08_17 domden.xlsm

Ex# Category **ORCHARD "Orchestral EFFECT" ANALYSIS Example**

OrchPlay Bookmarking system

total 69

2	Work : Joseph Haydn - Symphony 100 - III	Haydn_Symph100Military_iii(50-65)_ORCH
9	Work : Wolfgang Amadeus Mozart - Don Giovanni - None	Mozart_DonGiovanni_Overture(1-39)_ORCH
4	Work : Franz Schubert - Symphony 9 - IV	Schubert_Symph9_iv(543-564)_ORCH
4	Work : Georges Bizet - Carmen - None	Bizet_Carmen_Overture(121-147)_Orch
5	Work : Giuseppe Verdi - Aida - None	Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57)_Orch
9	Work : Hector Berlioz - Symphonie Fantastique - IV	Berlioz_SymphFantastique_iv(1-77)_ORCH
7	Work : Gustav Mahler - Symphony 1 - I	Mahler_Symph1_i(1-22, 356-363)_ORCH
9	Work : Modest Mussorgsky - Pictures at an Exhibition - 2	MoussorgskyOrchRavel_Tableaux_Gnome(57-109)_ORCH
11	Work : Claude Debussy - La Mer - I	Debussy_La Mer_i(141 mes)_ORCH+REDUC(122-141)
9	Work : Ralph Vaughan Williams - Symphony 8 - IV	Work : VaughanWilliams_Symph8_iv(12-25, 54-96)_ORCH

15- ORCHPLAY within the Orchestration & Perception Project .4

Category **ORCHARD "Orchestral EFFECT" ANALYSIS Example** **OrchPlay Bookmarking system**

Blend Blend Detail

SCORE **Static Emergence (BLE2134)**

REC

BOOKMARKS: DONE

Work : Franz Schubert - Symphony 9 - IV

Measures : 543 - 558
Time : 00:05:32 - 00:05:42
Strength : 4
Score pages : 99 to 100
PDF pages : 21 to 22



Schubert_Symph9_iv(543-564)_ORCH

TUTTI

Instrumentation: flute 1, clarinet 1

DL: Only Flute

DL: Only Clarinet

Notes : octave doubling of flute and clarinet creates an emergent timbre.

Recording Info: Berliner Philharmoniker, Herbert von Karajan, 1978, EMI, 1996

BLE Schubert_Symph9_iv(543-564) [mes.(543-558)] FI 1+Ob 1+Ob 2+Cl 1+Timp 1+VI I+VI II+Vla+Vc+Db {Timpani} #All Instruments in mes selection

BLE Schubert_Symph9_iv(543-564) [mes.(543-558)] FI 1+Cl 1 {} #Doubling Oct Timbral fused WW

BLE Schubert_Symph9_iv(543-564) [mes.(543-558)] FI 1 {} #Doubling Oct Timbral WW

BLE Schubert_Symph9_iv(543-564) [mes.(543-558)] Cl 1 {} #Doubling Oct Timbral WW

Recording Info: OrchSim version 1.0 (Winter 2017)

Segregation

Segregation Detail

SCORE **2 Parts (SEG2023)**

REC

BOOKMARKS: DONE

Work : Franz Schubert - Symphony 9 - IV

Measures : 543 - 558
Time : 00:05:32 - 00:05:42
Strength : 4
Score pages : 99 to 100
PDF pages : 21 to 22



Schubert_Symph9_iv(543-564)_ORCH

TUTTI

Group 1: flute 1, clarinet 1

Group 2: oboe 1, oboe 2, violin 1, violin 2, viola, cello

Notes : contrasting melodies in foreground.

Recording Info: Berliner Philharmoniker, Herbert von Karajan, 1978, EMI, 1996

SEG Schubert_Symph9_iv(543-564) [mes.(543-558)] FI 1+Ob 1+Ob 2+Cl 1+Timp 1+VI I+VI II+Vla+Vc+Db {Timpani} #All Instruments in mes selection

SEG Schubert_Symph9_iv(543-564) [mes.(543-558)] FI 1+Cl 1 {} #Foreground WW

SEG Schubert_Symph9_iv(543-564) [mes.(543-558)] Ob 1+Ob 2+VI I+VI II+Vla+Vc {} #Middleground WW+STR

Recording Info: OrchSim version 1.0 (Winter 2017)

Stratification

Stratification Detail

SCORE

2 Layers - Progressive (STR2096)

REC

BOOKMARKS: DONE

Work : Franz Schubert - Symphony 9 - IV

Measures : 543 - 558
Time : 00:05:32 - 00:05:42
Strength : 4
Score pages : 99 to 100
PDF pages : 21 to 22



Schubert_Symph9_iv(543-564)_ORCH

TUTTI

Foreground: flute 1, oboe 1, oboe 2, clarinet 1, violin 1, violin 2, viola, cello

Background: timpani 1, bass
Notes : foreground is segregated and has an antiphonal contrast and a blend.

Recording Info: Berliner Philharmoniker, Herbert von Karajan, 1978, EMI, 1996

STR20 Schubert_Symph9_iv(543-564) [mes.(543-558)] FI 1+Ob 1+Ob 2+Cl 1+Timp 1+VI I+VI II+Vla+Vc+Db {Timpani} #All Instruments in mes selection

STR20 Schubert_Symph9_iv(543-564) [mes.(543-558)] FI 1+Ob 1+Ob 2+Cl 1+VI I+VI II+Vla+Vc {} #Foreground WW and Middleground WW+STR

STR20 Schubert_Symph9_iv(543-564) [mes.(543-558)] Timp 1+Db 96-2 {Timpani} #Background PERC+STR

Recording Info: OrchSim version 1.0 (Winter 2017)

Contrast Contrast Detail

SCORE

Antiphonal Contrast (CON2093)

REC

BOOKMARKS: DONE

Work : Franz Schubert - Symphony 9 - IV

Measures : 543 - 556
Time : 00:05:32 - 00:05:40
Strength : 3
Score pages : 99 to 100
PDF pages : 21 to 22



Schubert_Symph9_iv(543-564)_ORCH

TUTTI

Group 1: flute 1, clarinet 1

Group 2: oboe 1, oboe 2, violin 1, violin 2, viola, cello

Notes : part of foreground that is also segregated.

CON2 Schubert_Symph9_iv(543-564) [mes.(543-556)] FI 1+Ob 1+Ob 2+Cl 1+Timp 1+VI I+VI II+Vla+Vc+Db {Timpani} #All Instruments in mes selection

CON2 Schubert_Symph9_iv(543-564) [mes.(543-556)] FI 1+Cl 1 {} #Foreground WW

CON2 Schubert_Symph9_iv(543-564) [mes.(543-556)] Ob 1+Ob 993-2 2+VI I+VI II+Vla+Vc {} #Middleground WW+STR

CON20 Schubert_Symph9_iv(543-564) [mes.(546-548)] Ob 1+Ob 2+VI I+VI II+Vla+Vc {} #Middleground WW+STR

CON20 Schubert_Symph9_iv(543-564) [mes.(554-556)] Ob 1+Ob 2+VI I+VI II+Vla+Vc {} #Middleground WW+STR

Recording Info: Berliner Philharmoniker, Herbert von Karajan, 1978, EMI, 1996

Recording Info: OrchSim version 1.0 (Winter 2017)

> future
PunchIn
PunchOut

Blend Detail

Static Emergence (BLE2134)

Work : Franz Schubert - Symphony 9 - IV

Measures : 543 - 558

Time : 00:05:32 - 00:05:42

Strength : 4

Score pages : 99 to 100

PDF pages : 21 to 22

Instrumentation: flute 1, clarinet 1

Notes : octave doubling of flute and clarinet creates an emergent timbre.



Recording Info:

Berliner Philharmoniker, Herbert von Karajan, 1978, EMI, 1996

Proposed LINK

Open the multichannel version with the [OrchPlay software](#).

An OrchPlay PRO TEACHER subscription is required



Download Bookmarks Static Emergence (BLF2134.opll)

- BLE2134-0 Schubert_Symph9_iv(543-564) [mes.543-558] Fl 1+Ob 1+Ob 2+Cl 1+Timp 1+VI I+VI II+Vla+Vc+Db {Timpani} #All Instruments in mes selection
- BLE2134-1 Schubert_Symph9_iv(543-564) [mes.(543-558)] Fl 1+Cl 1 {} #Doubling Oct Timbral fused WW
- BLE2134-2 Schubert_Symph9_iv(543-564) [mes.(543-558)] Fl 1 {} #Doubling Oct Timbral WW
- BLE2134-3 Schubert_Symph9_iv(543-564) [mes.(543-558)] Cl 1 {} #Doubling Oct Timbral WW

Blend

Blend Detail

SCORE REC Static Augmentation (BLE507)

BOOKMARKS: DONE

Verdi_Aida_ActII- DanzaDiPiccoliSchiaviMori(41-57)_Orch

Work : Giuseppe Verdi - Aida - None

Measures : 45 - 52
Time : 00:01:03 - 00:01:15
Strength : 3
Score pages : 114 to 115
PDF pages : 8 to 9



TUTTI

Combined Instruments: piccolo 1, flute 1, oboe 1, oboe 2, clarinet 1, clarinet 2, trumpet 1, trumpet 2, violin 1, violin 2

Dominating Instruments: trumpet 1, trumpet 2

Embellishing Instruments: piccolo 1, flute 1, oboe 1, oboe 2, clarinet 1, clarinet 2, violin 1, violin 2

Notes : Augmented trumpet

Recording Info: Wiener Philharmoniker, Herbert von Karajan, Decca

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57) [mes. 45-52] Picc 1+Fl 1+Ob 1+Ob 2+Cl 1+Cl 2+Bsn 1+Bsn 2+Hn 1+Hn 2+Hn 3+Hn 4+Tpt 1+Tpt 2+Tbn 1+Tbn 2+Bass Tbn 1+Tuba 1+Timp 1+Perc 1+Perc 2+Perc 5+VI I+VI II+Vla+Vc +Db {Timpani+Triangle+Bass Drum+Cymbal Piatti} #All Instruments in mes selection

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57) [mes. 45-52] Picc 1+Fl 1+Ob 1+Ob 2+Cl 1+Cl 2+Tpt 1+Tpt 2+VI I+VI II {} #Foreground WW+BRASS+STR and Dominating BRASS and Doubling Multi Oct Timbral WW+STR and Doubling Multi Oct Reinforce WW+STR

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57) [mes. 45-52] Tpt 1+Tpt 2 {} #Dominating BRASS

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57) [mes. 45-52] Picc 1+Fl 1+Ob 1+Ob 2+Cl 1+Cl 2+VI I+VI II {} #Doubling Multi Oct Timbral WW+STR and Doubling Multi Oct Reinforce WW+STR

Recording Info: OrchSim version 1.0 (Winter 2016)

Segregation

Segregation Detail

SCORE REC 2 Parts (SEG133)

BOOKMARKS: DONE

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57)_Orch

Work : Giuseppe Verdi - Aida - None
Measures : 53 - 56
Time : 00:01:15 - 00:01:21
Strength : 4
Score pages : 115 to 116
PDF pages : 9 to 10



TUTTI

Group 1: piccolo 1, flute 1, flute 2, oboe 1, oboe 2, clarinet 1, clarinet 2, horn 1, horn 2, horn 3, horn 4, trumpet 1, trumpet 2, violin 1, violin 2

Group 2: bassoon 1, bassoon 2, trombone 1, trombone 2, trombone 3, bass trombone, viola, cello, bass

NOTE: You wrote bass trombone for Cimbalso > We use a Tuba for Cimbalso (normal practice)

Notes : 2-part segregation

Recording Info: Wiener Philharmoniker, Herbert von Karajan, Decca

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57) [mes.53-56] Picc 1+Fl 1+Fl 2+Ob 1+Ob 2+Cl 1+Cl 2+Bsn 1+Bsn 2+Hn 1+Hn 2+Hn 3+Hn 4+Tpt 1+Tpt 2+Tbn 1+Tbn 2+Bass Tbn 1+Tuba 1+Timp 1+Perc 1+Perc 2+Perc 5+VI I+VI II+Vla+Vc+Db {Timpani+Triangle+Bass Drum +Cymbal Piatti} #All Instruments in mes selection

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57) [mes.53-56] Picc 1+Fl 1+Fl 2+Ob 1+Ob 2+Cl 1+Cl 2+Hn 1+Hn 2+Hn 3+Hn 4+Tpt 1+Tpt 2+VI I+VI II {} #Doubling Multi Oct Timbral WW+HORN+BRASS+STR

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57) [mes.53-56] Bsn 1+Bsn 2+Tbn 1+Tbn 2+Bass Tbn 1+Tuba 1+Vla+Vc+Db {} #Dominating BRASS and Doubling Oct Timbral WW+STR

Recording Info: OrchSim version 1.0 (Winter 2016)

Blend

Blend Detail

SCORE REC Static Augmentation (BLE509)

BOOKMARKS: DONE

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57)_Orch

Work : Giuseppe Verdi - Aida - None

Measures : 53 - 56
Time : 00:01:15 - 00:01:21
Strength : 4
Score pages : 115 to 116
PDF pages : 9 to 10



TUTTI

Combined Instruments: bassoon 1, bassoon 2, trombone 1, trombone 2, bass trombone, tuba, viola, cello, bass

Dominating Instruments: trombone 1, trombone 2, trombone 3, bass trombone
NOTE: You wrote bass trombone for Cimbalso > We use a Tuba for Cimbalso (normal practice)

Embellishing Instruments: bassoon 1, bassoon 2, viola, cello, bass

Notes : Augmented trombone
Recording Info: Wiener Philharmoniker, Herbert von Karajan, Decca

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57) [mes. 53-56] Picc 1+Fl 1+Fl 2+Ob 1+Ob 2+Cl 1+Cl 2+Bsn 1+Bsn 2+Hn 1+Hn 2+Hn 3+Hn 4+Tpt 1+Tpt 2+Tbn 1+Tbn 2+Bass Tbn 1+Tuba 1+Timp 1+Perc 1+Perc 2+Perc 5+VI I+VI II+Vla +Vc+Db {Timpani+Triangle+Bass Drum+Cymbal Piatti} #All Instruments in mes selection

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57) [mes. 53-56] Bsn 1+Bsn 2+Tbn 1+Tbn 2+Bass Tbn 1+Tuba 1+Vla +Vc+Db {} #Dominating BRASS and Doubling Oct Timbral WW+STR

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57) [mes. 53-56] Tbn 1+Tbn 2+Bass Tbn 1+Tuba 1 {} #Dominating BRASS

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57) [mes. 53-56] Bsn 1+Bsn 2+Vla+Vc+Db {} #Doubling Oct Timbral WW+STR

Recording Info: OrchSim version 1.0 (Winter 2016)

Stratification

Stratification Detail

SCORE REC 2 Layers - Static (STR364)

BOOKMARKS: DONE

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57)_Orch

Work : Giuseppe Verdi - Aida - None
Measures : 45 - 52
Time : 00:01:03 - 00:01:15
Strength : 3
Score pages : 114 to 115
PDF pages : 8 to 9



TUTTI

Foreground: piccolo 1, flute 1, oboe 1, oboe 2, clarinet 1, clarinet 2, trumpet 1, trumpet 2, violin 1, violin 2

Background: bassoon 1, bassoon 2, horn 1, horn 2, horn 3, horn 4, trombone 1, trombone 2, trombone 3, bass trombone, timpani 1, triangle, cymbals, bass drum, viola, cello, bass

Notes :
Recording Info: Wiener Philharmoniker, Herbert von Karajan, Decca

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57) [mes.45-52] Picc 1+Fl 1+Ob 1+Ob 2+Cl 1+Cl 2+Bsn 1+Bsn 2+Hn 1+Hn 2+Hn 3+Hn 4+Tpt 1+Tpt 2+Tbn 1+Tbn 2+Bass Tbn 1+Tuba 1+Timp 1+Perc 1+Perc 2+Perc 5+VI I+VI II+Vla+Vc+Db {Timpani+Triangle+Bass Drum +Cymbal Piatti} #All Instruments in mes selection

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57) [mes.45-52] Picc 1+Fl 1+Ob 1+Ob 2+Cl 1+Cl 2+Tpt 1+Tpt 2+VI I+VI II {} #Foreground WW+BRASS+STR

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57) [mes.45-52] Bsn 1+Bsn 2+Hn 1+Hn 2+Hn 3+Hn 4+Tbn 1+Tbn 2+Bass Tbn 1+Tuba 1+Perc 1+Perc 2+Perc 5+Vla+Vc+Db {} #Background WW +HORN+BRASS+PERC+STR

Recording Info: OrchSim version 1.0 (Winter 2016)

Gesture

Gesture Detail

SCORE

REC not
online

Sudden Addition (GES58)

BOOKMARKS: DONE

Verdi_Aida_ActII-
DanzaDiPiccoliSchiaviMori(41-57)_Orch

Work : Giuseppe Verdi - Aida - None

Measures : 45 - 45 > DL: Rather 43-46

Time : 00:01:03 - 00:01:03

Strength : 1

Score pages : 114 to 114

PDF pages : 8 to 8



TUTTI

DL: Instruments before addition only

DL: Added instruments only

Notes : Sudden addition arrives from dynamic
quality rather than addition of instruments**NOTE (DL) : 2 trumpets, 3 trombones and a tuba
are ADDED; and new octave doublings in the WW
are ADDED too****Recording Info:** Wiener Philharmoniker,
Herbert von Karajan, Decca**Recording Info:** OrchSim version 1.0 (Winter 2016)

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57) [mes.43-46] Picc 1+Fl
1+Ob 1+Ob 2+Cl 1+Cl 2+Bsn 1+Bsn 2+Hn 1+Hn 2+Hn 3+Hn 4+Tpt
GES58-0 1+Tpt 2+Tbn 1+Tbn 2+Bass Tbn 1+Tuba 1+Timp 1+Perc 1+Perc 5+VI I
+VI II+Vla+Vc+Db {Timpani+Triangle+Bass Drum+Cymbal Piatti} #All
Instruments in mes selection

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57) [mes.43-46] Picc 1+Fl
GES58-1 1+Ob 1+Cl 1+Bsn 1+Bsn 2+Hn 1+Hn 2+Hn 3+Hn 4+Timp 1+Perc 1+Perc
5+VI I+VI II+Vla+Vc+Db {Timpani} #Contrast Timbral Fam WW+HORN
+PERC+STR vs WW+HORN+BRASS+PERC+STR

Verdi_Aida_ActII-DanzaDiPiccoliSchiaviMori(41-57) [mes.45-47] Ob 2+Cl
GES58-2 2+Tpt 1+Tpt 2+Tbn 1+Tbn 2+Bass Tbn 1+Tuba {} #Doubling Multi Oct
Reinforce WW+BRASS and Doubling Multi Oct Timbral WW+BRASS and
Coupling BRASS

SCORE Static Augmentation (BLE462)

REC

Work : Ralph Vaughan Williams - Symph 8 - IV

Measures : 12 - 13

Time : 00:00:14 - 00:00:18

Strength : 3

Score pages : 63 to 63, PDF pages : 2 to 2



TUTTI

Combined Instruments: oboe 1, oboe 2, clarinet 1, clarinet 2, bassoon 1, bassoon 2, horn 1, horn 2, trumpet 1, trumpet 2, trombone 1, trombone 2, trombone 3, violin 1, violin 2, viola, cello, bass

Dominating Instruments: violin 1, violin 2, viola, cello, bass

Embellishing Instruments: oboe 1, oboe 2, clarinet 1, clarinet 2, bassoon 1, bassoon 2, horn 1, horn 2, trumpet 1, trumpet 2, trombone 1, trombone 2, trombone 3

Notes : augmentation of strings

Sustaining, "dramatization" Instruments: timpani, bass drum

Recording Info: London Philharmonic Orchestra, Adrian Boult, Warner Records

BOOKMARKS: DONE

Work : VaughanWilliams_Symph8_iv(12-25, 54-96)_ORCH

BLE462-0 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.12-14] Picc 1+Fl 2+Ob 1+Ob 2+Cl 1+Cl 2+Bsn 1+Bsn 2+Hn 1+Hn 2+Tpt 1+Tpt 2+Tbn 1+Tbn 2+Tbn 3+Timp 1+Perc 1+Perc 2+Perc 5+Perc 6+Harp 1+Harp 2+Vl I+Vl II+Vla+Vc+Db {Timpani+Bass Drum +Glockenspiel+Tubular Bells+Gongs (tuned)} #All Instruments in mes selection

BLE462-1 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.12-13] Ob 1+Ob 2+Cl 1+Cl 2+Bsn 1+Bsn 2+Hn 1+Hn 2+Tpt 1+Tpt 2+Tbn 1+Tbn 2+Tbn 3+Vl I+Vl II+Vla+Vc+Db {} #Dominating STR and Doubling Multi Oct Reinforce WW+HORN+BRASS and Doubling Multi Oct Timbral WW+HORN+BRASS

BLE462-2 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.12-13] Vl I+Vl II +Vla+Vc+Db {} #Dominating STR

BLE462-3 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.12-13] Ob 1+Ob 2+Cl 1+Cl 2+Bsn 1+Bsn 2+Hn 1+Hn 2+Tpt 1+Tpt 2+Tbn 1+Tbn 2+Tbn 3 {} #Doubling Multi Oct Reinforce WW+HORN+BRASS and Doubling Multi Oct Timbral WW+HORN+BRASS

BLE462-4 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.14] Timpani 1+Perc 1 {Timpani+Bass Drum} #Pedal PERC and Drama PERC

Recording Info: OrchSim version 1.1 (Winter 2017)

15- within the Orchestration & Perception Project ·7

SCORE Static Augmentation (BLE470)

REC

Work : Ralph Vaughan Williams -

Symphony 8 - IV

Measures : 59 - 66

Time : 00:01:13 - 00:01:23

Strength : 5

Score pages : 70 to 71, PDF p. : 9 to 10



BOOKMARKS: DONE

Work : VaughanWilliams_Symph8_iv(12-25, 54-96)_ORCH

TUTTI

Combined Instruments: piccolo 1, flute 1, clarinet 1, clarinet 2, bassoon 1, bassoon 2

Dominating Instruments: piccolo 1, flute 1

Embellishing Instruments: clarinet 1, clarinet 2, bassoon 1, bassoon 2

Notes : augmentation of flute and piccolo

Recording Info: London Philharmonic Orchestra, Adrian Boult, Warner Records

BLE470-0 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.59-66] Picc 1+Fl 1+Ob 1+Ob 2+Cl 1+Cl 2+Bsn 1+Bsn 2+Hn 1+Hn 2+Tpt 1+Tpt 2+Tbn 1+Tbn 2+Tbn 3+Timpani 1+Perc 2+Perc 6+Harp 1+Harp 2+Vl I+Vl II+Vla+Vc+Db {Timpani+Tubular Bells+Gongs (tuned)+Harp} #All Instruments in mes selection

BLE470-1 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.59-66] Picc 1+Fl 1+Cl 1+Cl 2+Bsn 1+Bsn 2 {} #Dominating WW and Coupling WW, and Doubling Multi Oct Reinforce WW and Doubling Multi Oct Timbral WW

BLE470-2 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.59-66] Picc 1+Fl 1 {} #Dominating WW and Coupling WW

BLE470-3 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.59-66] Cl 1+Cl 2+Bsn 1+Bsn 2 {} #Doubling Multi Oct Reinforce WW and Doubling Multi Oct Timbral WW

Recording Info: OrchSim version 1.1 (Winter 2017)

SCORE Static Augmentation (BLE469)

REC

Work : Ralph Vaughan Williams - Symph 8 - IV

Measures : 59 - 66

Time : 00:01:13 - 00:01:23

Strength : 4

Score pages : 70 to 71, DF pages : 9 to 10



TUTTI

Combined Instruments: oboe 1, oboe 2, violin 1, violin 2, viola, cello, bass

Dominating Instruments: violin 1, violin 2, viola, cello

NOTE DL: Vla seems to participate in EMBELLISHING

Embellishing Instruments: oboe 1, oboe 2, bass

NOTE DL: HORNS MISSING

Notes : augmentation of strings

Recording Info: London Philharmonic Orchestra, Adrian Boult, Warner Records

BOOKMARKS: DONE

Work : VaughanWilliams_Symph8_iv(12-25, 54-96)_ORCH

BLE469-0 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.59-66] Picc 1+Fl 1+Ob 1+Ob 2+Cl 1+Cl 2+Bsn 1+Bsn 2+Hn 1+Hn 2+Tpt 1+Tpt 2+Tbn 1+Tbn 2+Tbn 3+Timpani 1+Perc 2+Perc 6+Harp 1+Harp 2+Vl I+Vl II+Vla+Vc+Db {Timpani+Tubular Bells+Gongs (tuned)+Harp} #All Instruments in mes selection

BLE469-1 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.59-66] Ob 1+Ob 2+Hn 1+Hn 2+Vl I+Vl II+Vla+Vc+Db {} #Dominating STR and Doubling Multi Oct Reinforce STR and Doubling Multi Oct Timbral WW+HORN+STR and Pedal Hn 1+Hn 2+Vla+Db

BLE469-2 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.59-66] Vl I+Vl II +Vc {} #Dominating STR and Doubling Multi Oct Reinforce STR

BLE469-3 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.59-66] Ob 1+Ob 2+Hn 1+Hn 2+Vla+Db {} #Doubling Multi Oct Timbral WW+HORN +STR and Pedal Hn 1+Hn 2+Vla+Db

Recording Info: OrchSim version 1.1 (Winter 2017)

SCORE Static Augmentation (BLE471)

REC

Work : Ralph Vaughan Williams -

Symphony 8 - IV

Measures : 81 - 86

Time : 00:01:40 - 00:01:47

Strength : 5

Score pages : 73 to 74, PDF p.: 12 to 13



BOOKMARKS: DONE

Work : VaughanWilliams_Symph8_iv(12-25, 54-96)_ORCH

TUTTI

Combined Instruments: clarinet 1, harp 1, viola

Dominating Instruments: clarinet 1

Embellishing Instruments: harp 1, viola

Notes : augmentation of clarinet

Recording Info: London Philharmonic Orchestra, Adrian Boult, Warner Records

BLE471-0 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.81-86] Cl 1+Perc 5+Harp 1+Vl I+Vl II+Vla {Vibraphone+Harp} #All Instruments in mes selection

BLE471-1 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.81-86] Cl 1+Harp 1+Vla {Harp} #Dominating WW and Solo WW and Doubling Unis Timbral HARP+STR

BLE471-2 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.81-86] Cl 1 {} #Dominating WW and Solo WW

BLE471-3 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.81-86] Harp 1+Vla {Harp} #Doubling Unis Timbral HARP+STR

Recording Info: OrchSim version 1.1 (Winter 2017)

15- within the Orchestration & Perception Project ·8

Segregation

SCORE
REC

Segregation Detail
2 Parts (SEG119)

BOOKMARKS: DONE

Work : Ralph Vaughan Williams - Symphony 8 - IV
Measures : 59 - 66
Time : 00:01:13 - 00:01:22
Strength : 5
Score pages : 70 to 71
PDF pages : 9 to 10



Work : VaughanWilliams_Symph8_iv(12-25, 54-96)_ORCH

TUTTI

Group 1: oboe 1, oboe 2, violin 1, violin 2, viola, cello
NOTE DL: To stay consistent with preceding analysis: HORNS AND Db MISSING

Group 2: piccolo 1, flute 1, clarinet 1, clarinet 2, bassoon 1, bassoon 2
Notes : 2-part segregation

Recording Info: London Philharmonic Orchestra, Adrian Boult, Warner Records

SEG119-0 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.59-66] Picc 1+Fl 1+Ob 1+Ob 2+Cl 1+Cl 2+Bsn 1+Bsn 2+Hn 1+Hn 2+Tpt 1+Tpt 2+Tbn 1+Tbn 2+Tbn 3+Timpani 1+Perc 2+Perc 6+Harp 1+Harp 2+VI I+VI II+Vla+Vc+Db {Timpani+Tubular Bells+Gongs (tuned)+Harp} #All Instruments in mes selection

SEG119-1 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.59-66] Ob 1+Ob 2+Hn 1+Hn 2+VI I+VI II+Vla+Vc+Db {} #Foreground WW +HORN+STR

SEG119-2 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.59-66] Picc 1+Fl 1+Cl 1+Cl 2+Bsn 1+Bsn 2 {} #Middleground WW

Recording Info: OrchSim version 1.1 (Winter 2017)

Stratification

SCORE
REC

Stratification Detail
2 Layers - Static (STR352)

BOOKMARKS: DONE

Work : Ralph Vaughan Williams - Symphony 8 - IV
Measures : 81 - 86
Time : 00:01:40 - 00:01:47
Strength : 4
Score pages : 73 to 74
PDF pages : 12 to 13



Work : VaughanWilliams_Symph8_iv(12-25, 54-96)_ORCH

TUTTI

Foreground: clarinet 1, harp 1, viola

Background: vibraphone, violin 1, violin 2
Notes : viola pizzicato

Recording Info: London Philharmonic Orchestra, Adrian Boult, Warner Records

STR352-0 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.81-86] Cl 1+Perc 5+Harp 1+VI I+VI II+Vla {Vibraphone+Harp} #All Instruments in mes selection

STR352-1 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.81-86] Cl 1+Harp 1+Vla {Harp} #Foreground WW+HARP+STR

STR352-2 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.81-86] Perc 5+VI I+VI II {Vibraphone} #Background PERC+STR

Recording Info: OrchSim version 1.1 (Winter 2017)

Gesture

SCORE
REC not online

Gesture Detail
Gradual Addition (GES7)

BOOKMARKS: DONE

Work : Ralph Vaughan Williams - Symphony 8 - IV
Measures : 83 - 95 --> DL: RATHER: 81-95
Time : 00:01:43 - 00:01:57
Strength : 4
Score pages : 74 to 75
PDF pages : 13 to 14



Work : VaughanWilliams_Symph8_iv(12-25, 54-96)_ORCH

TUTTI

Notes : Very powerful gradual addition following a sudden reduction.

DL: "Core-group"

DL: (Progressively) added instruments

Recording Info: London Philharmonic Orchestra, Adrian Boult, Warner Records

GES7-0 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.81-95] Picc 1+Fl 1+Ob 1+Ob 2+Cl 1+Cl 2+Bsn 1+Bsn 2+Hn 1+Hn 2+Tpt 1+Tpt 2+Perc 1+Perc 2+Perc 5+Perc 6+Kboard 2+Harp 1+Harp 2+VI I+VI II+Vla+Vc+Db {Vibraphone+Cymbal susp +Tubular Bells+Gongs (tuned)+Celesta+Harp} #All Instruments in mes selection

GES7-1 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.81-95] Picc 1+Fl 1+Ob 1+Ob 2+Cl 1+Cl 2+Bsn 1+Bsn 2+Hn 1+Hn 2+Tpt 1+Tpt 2+Perc 1+Perc 2+Perc 5+Perc 6+Kboard 2+Harp 1+Harp 2+VI I+VI II+Vla+Vc+Db {Vibraphone+Cymbal susp +Tubular Bells+Gongs (tuned)+Celesta+Harp} #Orchestrated Crescendo WW+HORN+BRASS+PERC+KBOARD+HARP+STR

GES7-2 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.81-95] Cl 1+Perc 5+Harp 1+VI I+VI II+Vla {Vibraphone+Harp} #Foreground PERC+STR and Middleground WW+HARP+STR

GES7-3 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.87-95] Picc 1+Fl 1+Ob 1+Ob 2+Cl 2+Bsn 1+Bsn 2+Hn 1+Hn 2+Tpt 1+Tpt 2+Perc 1+Perc 2+Perc 6+Kboard 2+Harp 2+Vc+Db {Cymbal susp+Tubular Bells+Gongs (tuned)+Celesta+Harp} #Doubling Unis Timbral WW+BRASS+HARP+STR and Doubling Unis Reinforce WW+BRASS+HARP+STR and Coupling Db and Background PERC+KBOARD and Pedal HORN+BRASS+PERC+HARP+STR

Recording Info: OrchSim version 1.1 (Winter 2017)

Segregation

SCORE
REC

Segregation Detail
2 Parts (SEG120)

BOOKMARKS: DONE

Work : Ralph Vaughan Williams - Symphony 8 - IV
Measures : 69 - 71
Time : 00:01:25 - 00:01:28
Strength : 3
Score pages : 71 to 72
PDF pages : 10 to 11



Work : VaughanWilliams_Symph8_iv(12-25, 54-96)_ORCH

TUTTI

Group 1: flute 1, oboe 1, oboe 2, clarinet 1

NOTE DL: Cl 2 MISSING

Group 2: bassoon 1, bassoon 2
Notes : 2-part segregation

Recording Info: London Philharmonic Orchestra, Adrian Boult, Warner Records

SEG120-0 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.69-71] Picc 1+Fl 1+Ob 1+Ob 2+Cl 1+Cl 2+Bsn 1+Bsn 2+Hn 1+Hn 2+Tpt 1+Tpt 2+VI I+VI II+Vla+Vc+Db {} #All Instruments in mes selection

SEG120-1 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.69-71] Fl 1+Ob 1+Ob 2+Cl 1+Cl 2 {} #Foreground WW

SEG120-2 VaughanWilliams_Symph8_iv(12-25, 54-96) [mes.69-71] Bsn 1+Bsn 2 {} #Middleground WW

Recording Info: OrchSim version 1.1 (Winter 2017)



ORCHPLAY

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-Dr. Stephen McAdams, Canada Chair for Music Perception and Cognition (McGill University)



Music Perception and Cognition (McGill University)
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