Unorthodox Sound Synthesis

Seminar
Electronic Studio, TU Berlin
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Intro

Daniel Mayer
Institute of Electronic Music and Acoustics
University of Music and Performing Arts Graz

Intro – Overview

- Personal points of reference: composition and teaching

- Some **aesthetical** aspects of sound synthesis

- Some **taxonomical** aspects of sound synthesis

- Synthesis methods focussed in the seminar

Approach to UOS from Composition

- From algorithmic acoustic to electroacoustic composition

- *Lokale Orbits* (2007 - 2014), pieces for instruments and multichannel electronics, using granular synthesis

- Exploration of source material and further granulation methods (piece and artistic research project *kitchen studies*, granulation with fx sequencing per grain)

- *Matters* (2017 -), pieces for multichannel electronics, using various techniques (buffer modulation, wavefolding, granulation, feedback)

- *miSCellaneous_lib* (2009 -), library of SuperCollider extensions, including tools for various techniques, including the ones above

Approach to UOS from Teaching

- Standard examples from text books and software help files are often boring and lead to worn-out sounds

- Unusual combinations of well-known techniques can often produce interesting and surprising results

- Students often have good ideas for alternative synthesis approaches

Why UOS ? – a counter position

„There are no new sounds – context is everything"

Really ? Whilst context is a very relevant aspect of material usage, the search for resp. development of new material has always been an artistic screw. It's totally anti-dialectic and absurd to state that the search for new sounds has ended, it never will.

Though, granted:
New sounds alone don't result in a convincing work.

Raising Interest in Alternative Synthesis

- Various approaches by authors focussing on „alternative" approaches, e.g. Agostino di Scipio, Nick Collins (errant sound synthesis), Luc Döbereiner, David Pirrò, Sergio Luque and others, often in the tradition of the „non-standard" ideas of Koenig, Holtzman and Xenakis

- HSS Heretical Sound Synthesis Symposium
  Sibelius Academy, Helsinki, May 16-17 2019
  https://www.youtube.com
  ->   HSS Heretical Sound Synthesis

Proposition

We live in a lucky age regarding the possibilities of sound exploration – we live in an age of exhaustion regarding the artistic usage of new sounds.

Taxonomy of Digital Synthesis Techniques by Julius O. Smith III

- Spectral Model (e.g. Additive, Phase Vocoder, Subtractive)

- Physical Model (e.g. Modal, Waveguide)

- Processed Recording (e.g. Sampling, Granular, Wavetable T)

- Abstract Algorithm (e.g. FM, Waveshaping, Phase Distortion)

Projections for the Future

- Julius O. Smith III: Spectral Model & Physical Model !

- Processed Recording & Abstract Algorithm !

- OR ?
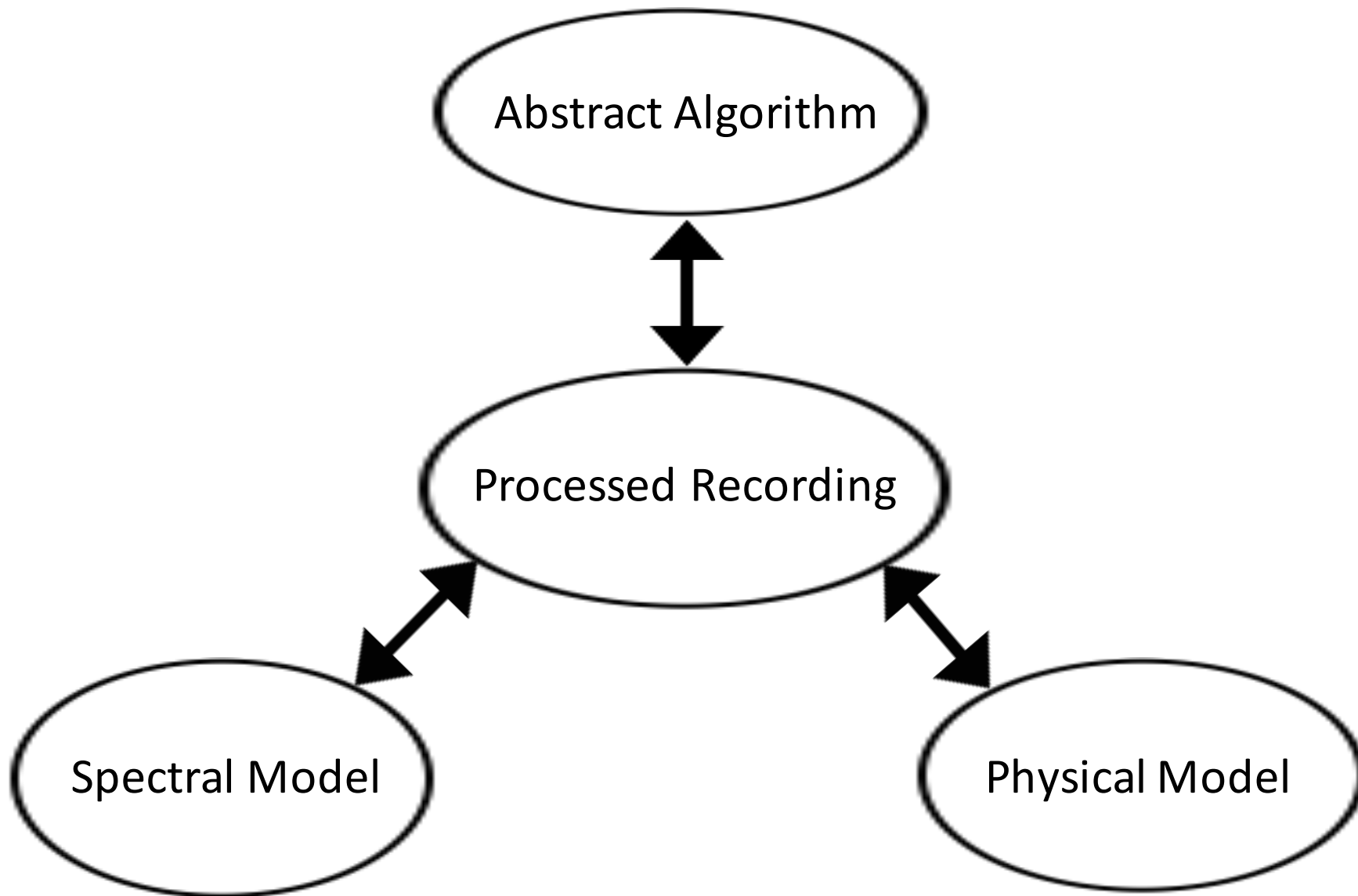
Why starting from Processed Recordings? (personal preference)

- The use of recordings allows a pre-selection which inherits aesthetical judgements.

- Recorded sounds often provide an appreciated amount of irregularity and opacity.

- One argument for models is the possibility of mathematical description and analysis, but this is not, or at least not immediately, an aesthetical criterion.

- Recorded sounds can serve well as a reference point for the dialectic play of attraction and repulsion, this is especially the case for recognizable sounds.

Seminar Schedule – Techniques and Classes

- Day 1:
  Wavefolding (SmoothFoldS), Buffer Modulation,
  Functional Iteration Synthesis (GFIS)

- Day 2:
  Single Sample Feedback (Fb1),
  Synthesis with Ordinary Differential Equations (Fb1_ODE)

- Day 3:
  Sequencing of Processings, Granulation (PbindFx)