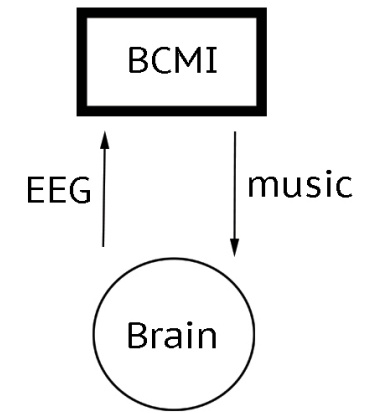


Developing Brain Computer Music Interfacing software

Reason for the talk:

- 1) SensorTech/Sonic Art
- 2) Need volunteers for the project

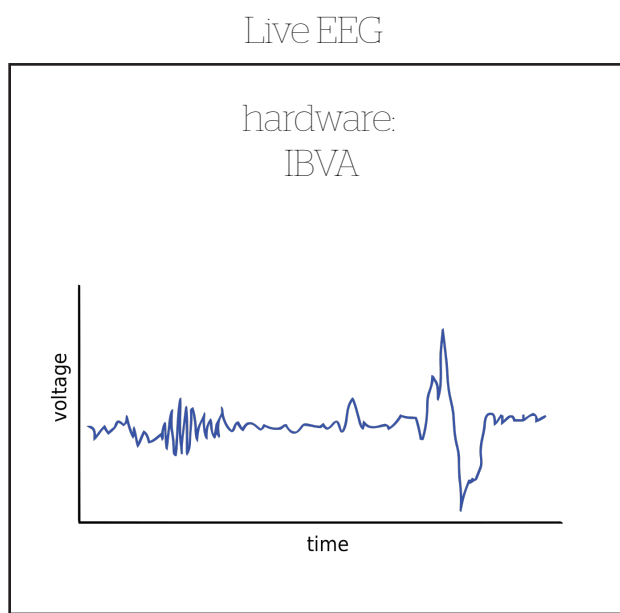
Brain Computer Music Interfacing



Real time EEG
+ Neuro Feedback Training
+ Algorithmic Composition



Outcome
1) Creative (concerts, installation)
2) Therapeutic (stress management)



BA project

hardware: IBVA, Arduino

software: Max, SuperCollider, Processing

MA project

hardware: Neurosky

software: SuperCollider

PhD reseach

hardware: Neurosky + Emotiv + OpenBCI

software: SuperCollider, InScore, XCode

+ MIDI to Analogue Synth

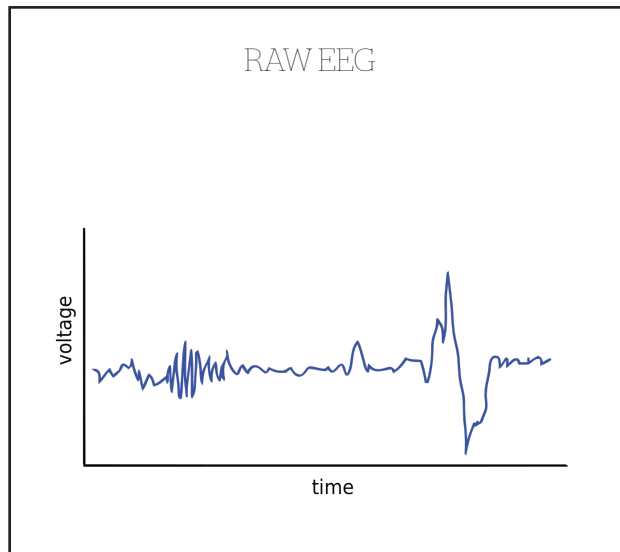
[< show focus video >](#)

What is EEG and what we can see in it?

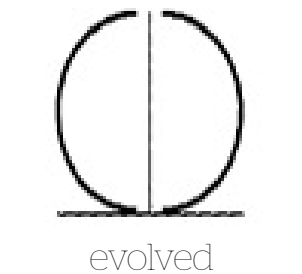
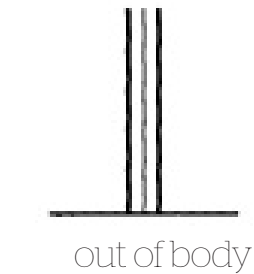
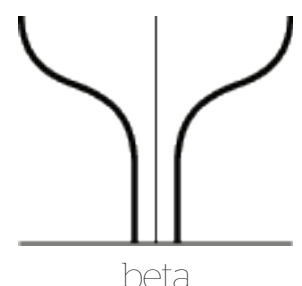
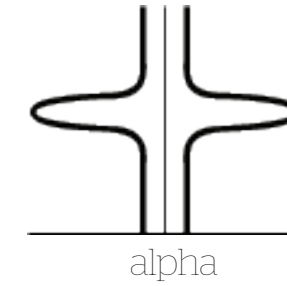
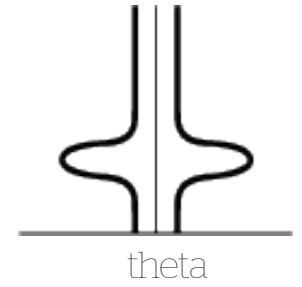
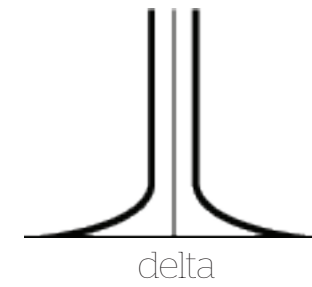
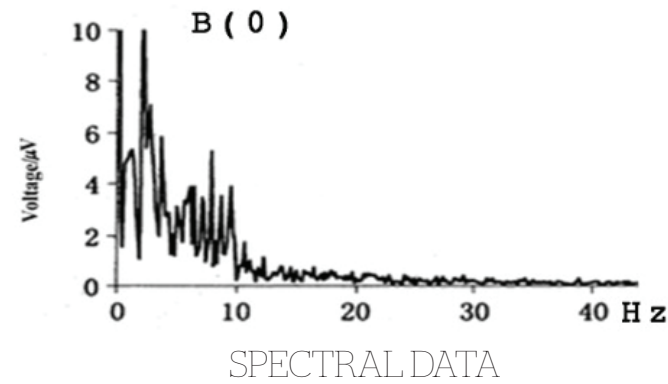
< switch on IBVA >

Electroencephalography

- electrical activity of the brain (mainly the surface)
- non invasive but noisy;



→
FFT /
DIGITAL FILTERS



BA project

hardware:
IBVA, Arduino

software:
Max, SuperCollider,



Outcome - Installation

Quite random;

< show HCI2009 last video >
// and some pictures of the installation;

Why Neurosky?

- easy to set up;
- I didn't have to do DSP or feature extraction (eSenses)

I wanted to concentrate on

- 1) music (sequencer+ synth)
- 2) NFT (reward system)

NFT

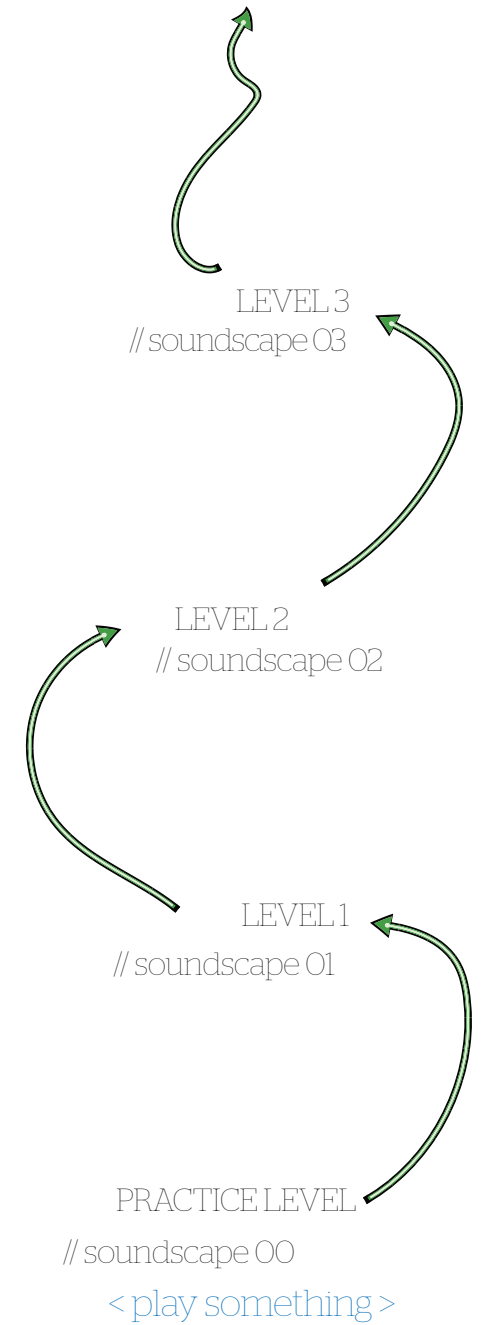
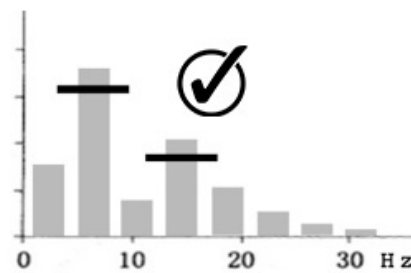
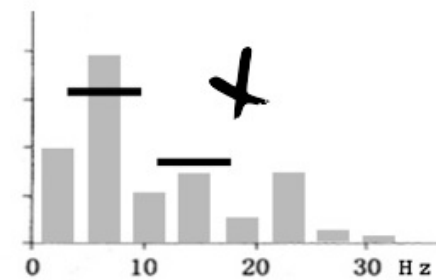
`<show sequencer> // save/load/scales`

`<show reward system> // thresholds/levels`

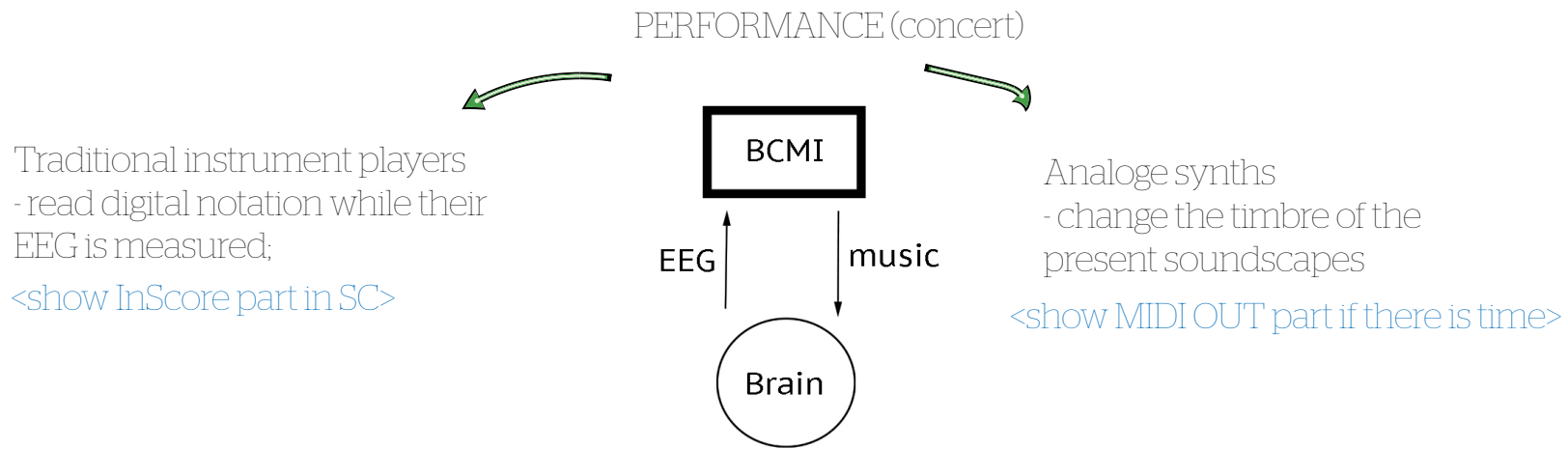
MA project

hardware:
Neurosky

software:
SuperCollider



What is added to the MA project in this PhD research?
Where do I need help (from you)?



TODO

- try different feature extraction (ERP, hemisphere synchronicity, two brain sync, ...)
// need to use different hardware to Neurosky;
- make all this work on a phone/tablet :)

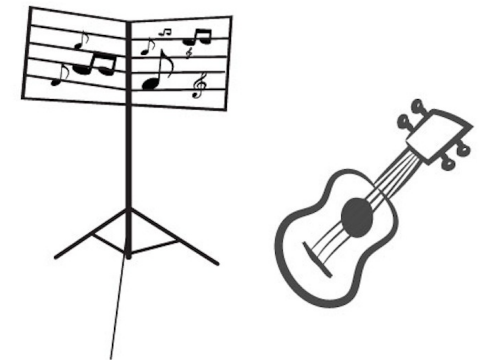
<get in touch >

- when do you graduate?
- what instrument you play?
- when do you have time to meetup?

PhD research

hardware:
Neurosky
+ Emotiv
+ OpenBCI

software:
SuperCollider, InScore
XCode



+ MIDI to Analogue Synth