

Music *Reason* *and/or* *Emotion*

Horácio Tomé Marques

FEUP - Faculdade de Engenharia da Universidade do Porto
University at Texas Austin

UT Austin | Portugal

Remember: a *dual framework*

- » an ***empirical*** scientific approach where with the help of colleagues from neurosciences I am researching on brain-waves, synchronization, phase-lock, oscillators, harmonic oscillators, oscillations, driven oscillations, driven synchronization, resonance, synergy potentiation, i.e. oscillations relationship;
- » an ***artistic*** approach where my concerns and artworks (e.g., live visuals) are anchored in the empirical processes of decoding the dynamics of the potentials occurring in the brain in ecological performative arts contexts.

Empirical

» Design of experiments and tools

EEG capture / collect {ecological context}

Classical Guitarists

{act of playing supported by visual following*}

Jazz Guitarist

{act of playing supported by mapped mental schemas*}

*Please note: general considerations

Music, Reason and/or Emotion
Lessons from a Practice Based Research
Methods, Tools, Findings, Barriers, Workarounds

>> **EEG capture**

Classical Guitarists

Same piece, same tempo, same “logic”

Jazz Guitarist

Same tempo, different piece(s), same “logic”

Music, Reason and/or Emotion
Lessons from a Practice Based Research
Methods, Tools, Findings, Barriers, Workarounds

>> *sessions*

Music, Reason and/or Emotion
Lessons from a Practice Based Research
Methods, Tools, Findings, Barriers, Workarounds

>> **EEG** sessions

- 1) *explanation*
- 2) *experiencing*
- 3) *habituation*

>> EEG sessions

- 1) *explanation*
- 2) *experiencing*
- 3) *habituation*



Horácio Tomé Marques
FEUP, UT Austin Portugal

>> EEG sessions

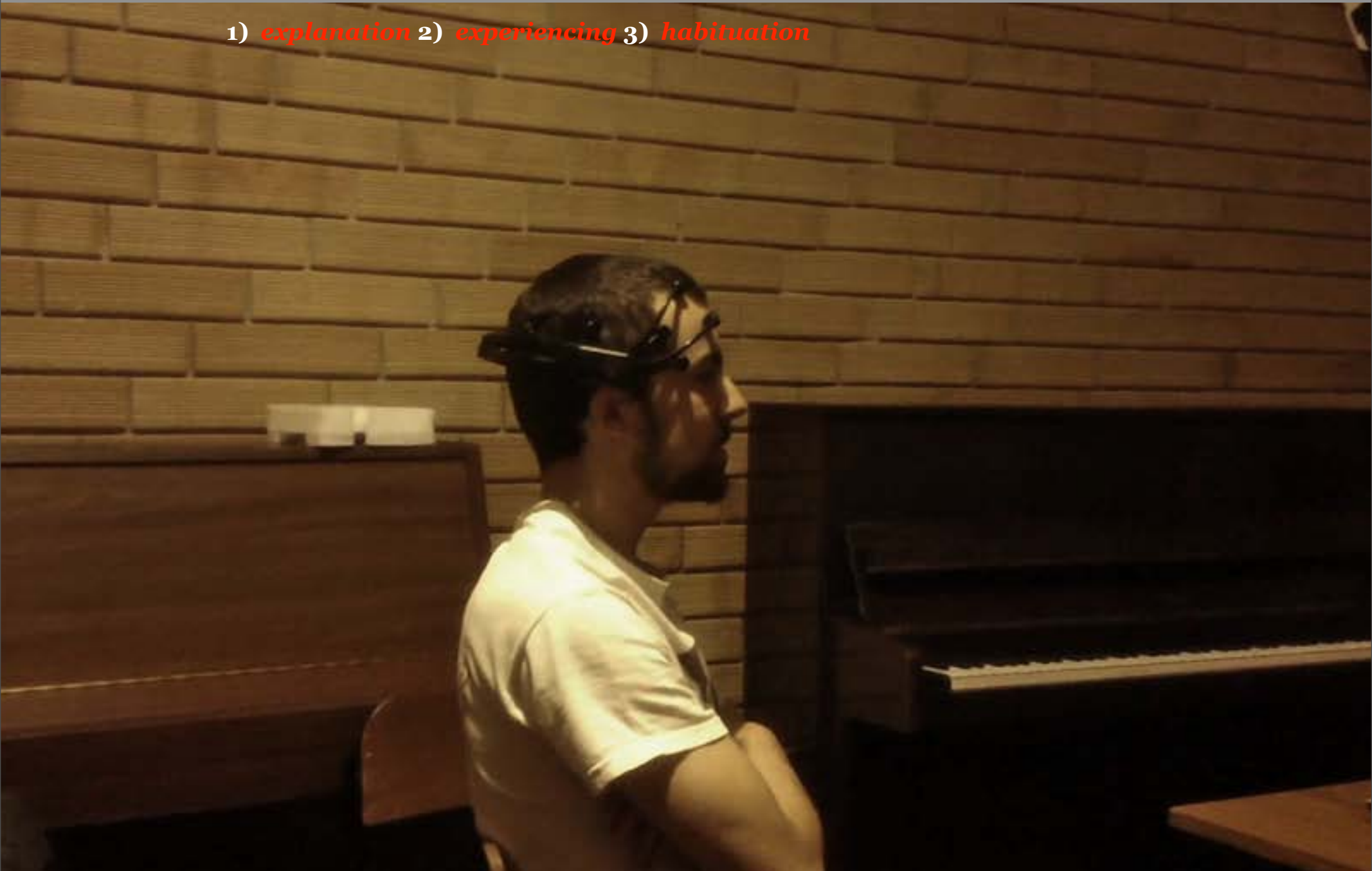
- 1) *explanation* 2) *experiencing* 3) *habituation*



Horácio Tomé Marques
FEUP, UT Austin Portugal

>> EEG sessions

- 1) *explanation*
- 2) *experiencing*
- 3) *habitation*



Horácio Tomé Marques
FEUP, UT Austin Portugal

>> EEG sessions

- 1) *explanation*
- 2) *experiencing*
- 3) *habituation*



Horácio Tomé Marques
FEUP, UT Austin Portugal

>> EEG sessions

- 1) *explanation*
- 2) *experiencing*
- 3) *habitation*



Horácio Tomé Marques
FEUP, UT Austin Portugal

Music, Reason and/or Emotion
Lessons from a Practice Based Research
Methods, Tools, Findings, Barriers, Workarounds

>> *impact*

Music, Reason and/or Emotion
Lessons from a Practice Based Research
Methods, Tools, Findings, Barriers, Workarounds

» EEG impact

- 1) *incredulity*
- 2) *suspicion*
- 3) *fascination*

Music, Reason and/or Emotion
Lessons from a Practice Based Research
Methods, Tools, Findings, Barriers, Workarounds

» EEG impact

- 1) *incredulity*
- 2) *suspicion and afraid*
- 3) *fascination*

Music, Reason and/or Emotion
Lessons from a Practice Based Research
Methods, Tools, Findings, Barriers, Workarounds

» **EEG** impact

- 1) *incredulity***
- 2) *suspicion and afraid***
- 3) *fascination and colab***

Music, Reason and/or Emotion
Lessons from a Practice Based Research
Methods, Tools, Findings, Barriers, Workarounds

» **EEG** impact

1) *incredulity*

» *my* brain? Can this machine/device read my brain? How?

» **EEG** impact

2) *suspicion*

» *my* brain? Can this machine/device read my brain? How?
- emotions (physical) and electric potentials/signals...

» **EEG** impact

2) *suspicion and afraid*

» *my* brain? Can this machine/device read my brain? How?

- emotions (physical) and electric potentials/signals...

- abstract thinking electric potentials/signals???....

» **EEG** impact

3) *fascination*

» *my* brain? Can *him* control this “thing”? How?

» EEG impact

3) *fascination*

» *my* brain? Can *him* control this “thing”? How?

- bio-feedback {understanding the basics}

» EEG impact

3) *fascination and colab*

» *my* brain? Can *him* control this “thing”? How?

- bio-feedback {understanding the basics}

- self knowledge {self implementation possibility}

>> EEG impact

- 1) *incredulity*
- 2) *suspicion and afraid*
- 3) *fascination and colab*



>> EEG impact

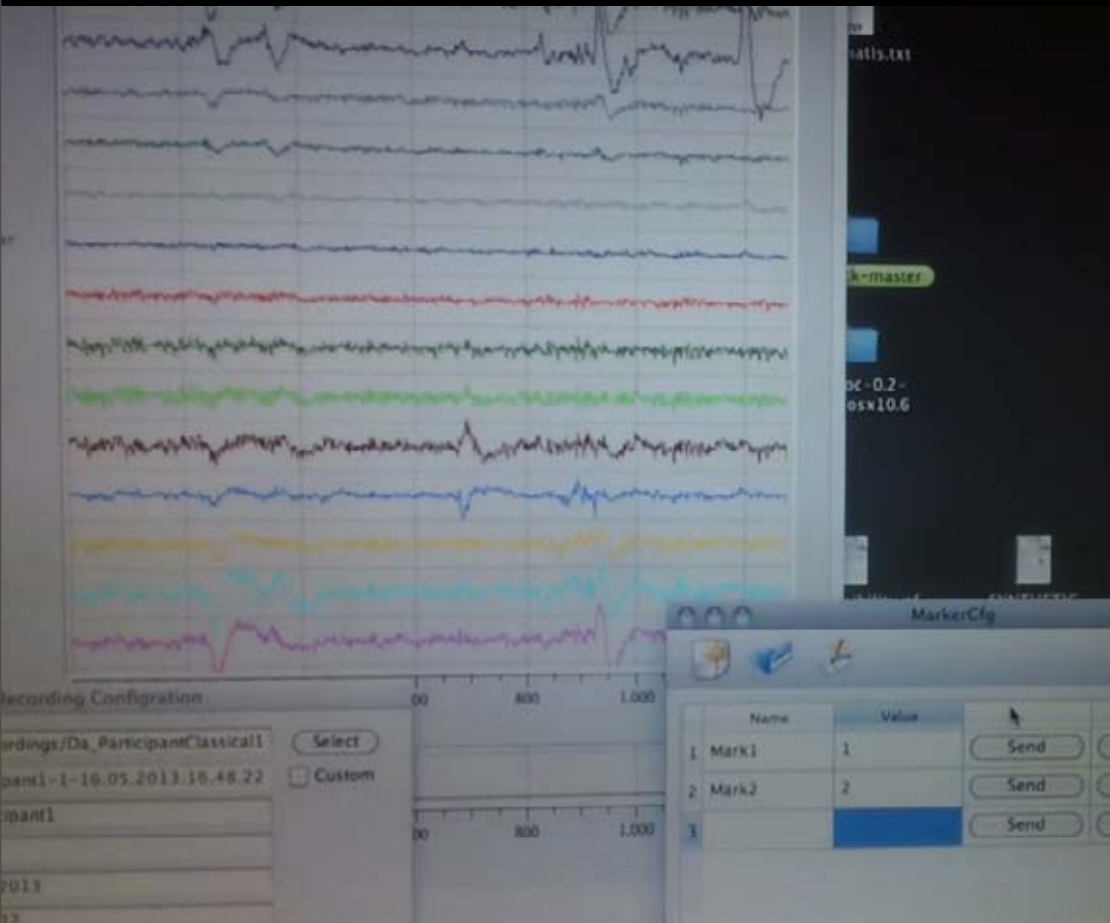
... 3) *fascination and colab*



Horácio Tomé Marques
FEUP, UT Austin Portugal

>> EEG impact

... 3) *fascination and colab*



Horácio Tomé Marques
FEUP, UT Austin Portugal

>> EEG impact

... 3) *fascination and colab*

Ant. *Yvi 1* Date: *16-5* Site: *UT Austin*

Sensation level consciously perceived*

1) Very slightly nothing at all	2) A little	3) Moderately	4) Quite a bit	5) Extremely
---------------------------------	-------------	---------------	----------------	--------------

Étude No 1
Étude des arpèges
Heitor Villa-Lobos

Allegro non troppo

Please clearly annotate the score the level of sensation and when/where it occurred if so (defining line + number)

>> EEG impact

... 3) *fascination and colab*



Horácio Tomé Marques
FEUP, UT Austin Portugal

>> EEG impact

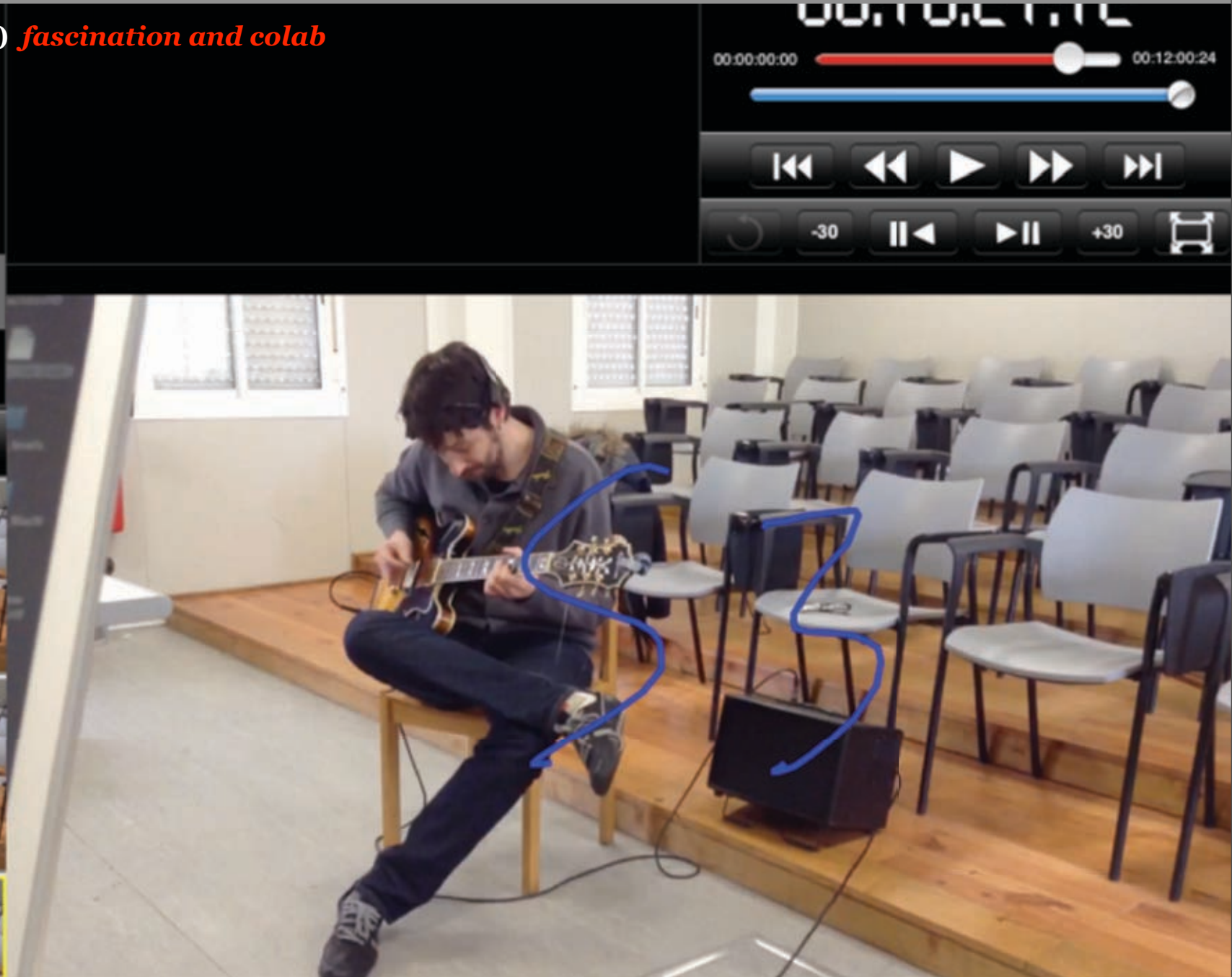
... 3) *and colab*



Horácio Tomé Marques
FEUP, UT Austin Portugal

>> EEG impact

... 3) *fascination and colab*



Horácio Tomé Marques
FEUP, UT Austin Portugal

Music, Reason and/or Emotion
Lessons from a Practice Based Research
Methods, Tools, Findings, Barriers, Workarounds

>> *troubles*

Music, Reason and/or Emotion
Lessons from a Practice Based Research
Methods, Tools, Findings, Barriers, Workarounds

» **EEG** troubles

- 1) *time to setup {each s}***
- 2) *noise, failures {...}***
- 3) *breakdowns {damage}***

>> EEG trouble

... 3) *breakdowns {damage}*



Horácio Tomé Marques
FEUP, UT Austin Portugal

>> EEG trouble

... 3) *breakdowns {damage}*



>> EEG trouble

... 3) ...*real damage*}



Music, Reason and/or Emotion
Lessons from a Practice Based Research
Methods, Tools, Findings, Barriers, Workarounds

>> *balance*
(current)

Music, Reason and/or Emotion
Lessons from a Practice Based Research
Methods, Tools, Findings, Barriers, Workarounds

Balance: current...

>> ***absolutely*** delighted with the process and with the results - not direct, yet, because the proper a specific data analysis will only begin to be made in about two months - but "***collateral***"

... in many aspects!

Balance: current...

- 1)** *musicians are amazed by themselves just by the fact of being confronted with themselves (self analysis) - doing a self report immediately following the capture sessions has an unprecedented impact in terms of self awareness and consciousness of behavior;*
- 2)** *the experience added further curiosity and interest in the process and, therefore, availability and will for keeping and future participation;*
- 3)** *generalized {huge} feeling that these processes may have potential impact on self knowledge and self implementation.*

Music
Reason
and/or
Emotion

>> *thank you!...*

Horácio Tomé Marques
FEUP - Faculdade de Engenharia da Universidade do Porto
University at Texas Austin

UT Austin | Portugal