ISHE10, MADISON (WI)

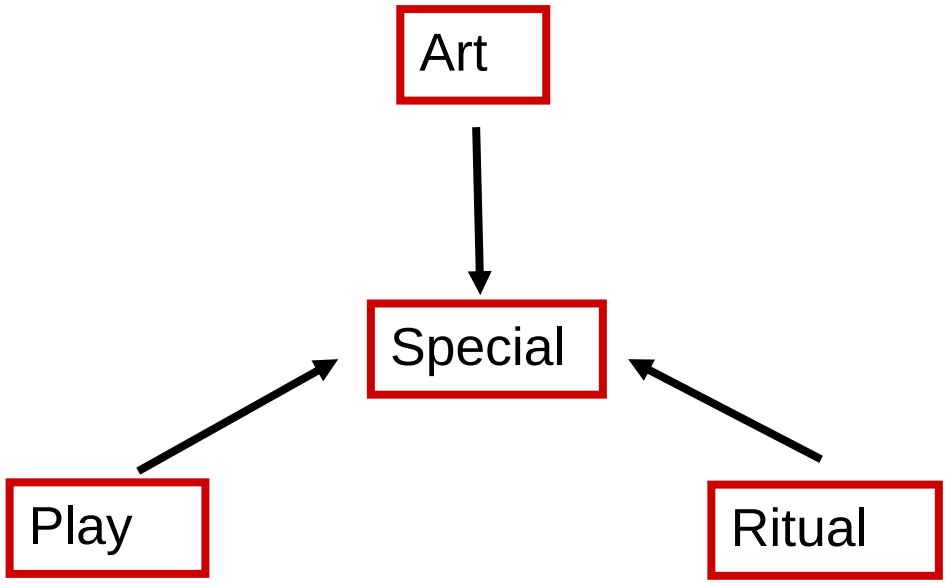
Munggona dit

Gerhard Apfelauer, Wulf Schiefenhövel

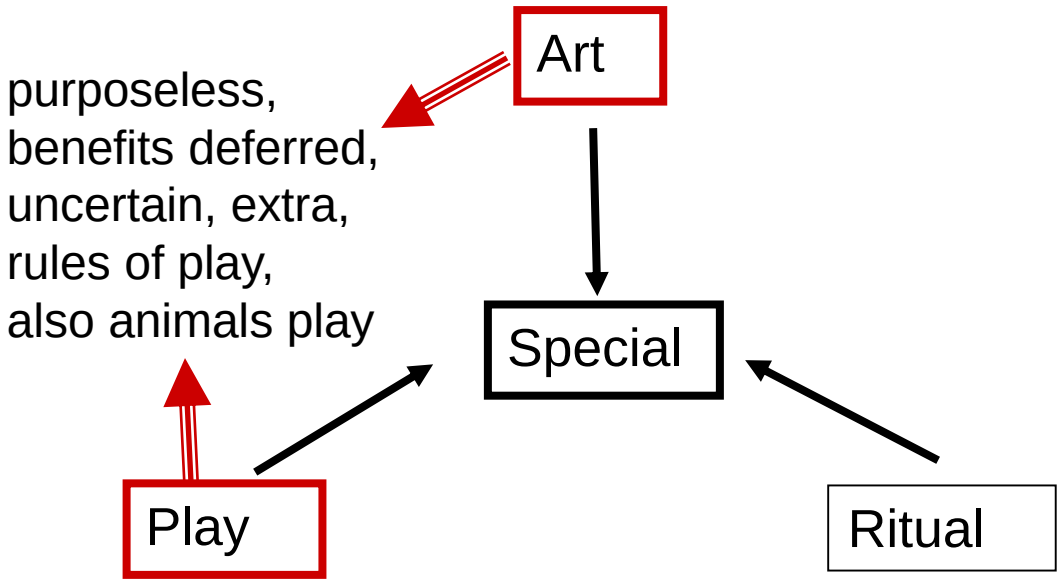
Methods of Analysis of Traditional Music of Eipo people from the Highlands of Western New Guinea

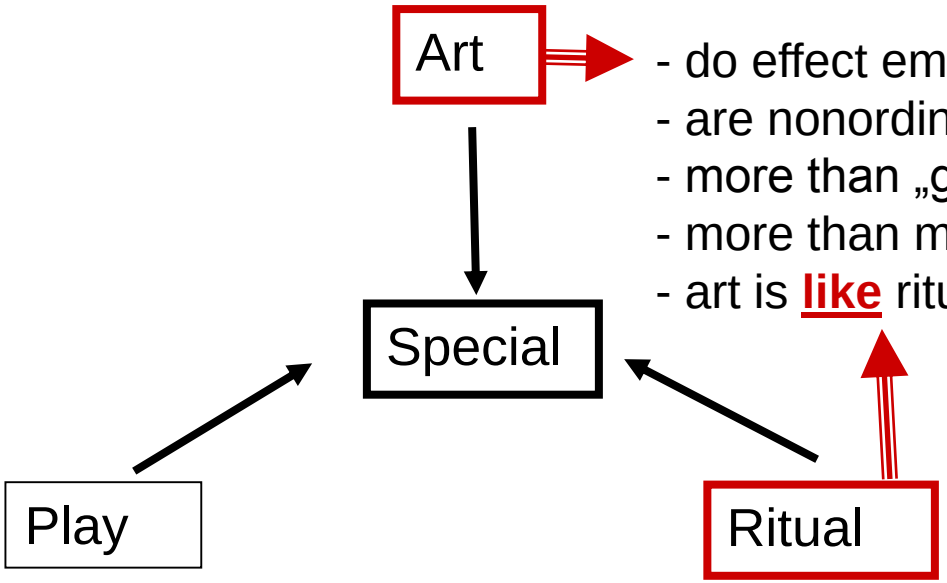
How to analyze musicologically songs from Western New Guinea and what are the ethological results ?

songs are something special …



Ellen Dissanayake: Homo aestheticus, New York 1992, pp. 194,


Art
purposeless,
benefits deferred,
uncertain, extra,
rules of play,
also animals play
Special
Play
Ritual



singing = art, play and ritual and …

If evolutionists do not recognize

the Homo Aestheticus,

if they cannot explain,

why art is a universal,

their concept must be aberrant.

Ellen Dissanayake

Eipo, the homo aestheticus (Ellen Dissanayake)

Art is by no means a construction of **western** culture (19th century).

Eipo singing is a „Making it special“.

Art has to be evaluated appropriately, from the Eipo point of view.

→ Transcription with **notes** is not sufficient to understand Eipo music.

Are there universal aspects of Music Aesthetics ? Yes, like

- musical tensions and relaxation ✓

- gamut and scales, which are perceived aesthetically ✓ e.g. pentatonic scale

- aesthetically effective patterns ✓

- creation and manipulation of expectations ✓

- the appreciation of competence (not of virtuosity!) ✓

Nalca dit

Music Analysis, Notation, Transcription (3)

Primary notation for composing purposes and (re-)production

Prescriptive Notation*), for synthesis of music

main goal: communication between composer und interpreter

Secondary notation = Transcription of music listened to

Descriptive Notation*), for analysis of music

main goal: musicological analysis, „understand“ the ethnological music

notation of of the musicethnologist‘s acoustic impressions in an oral culture

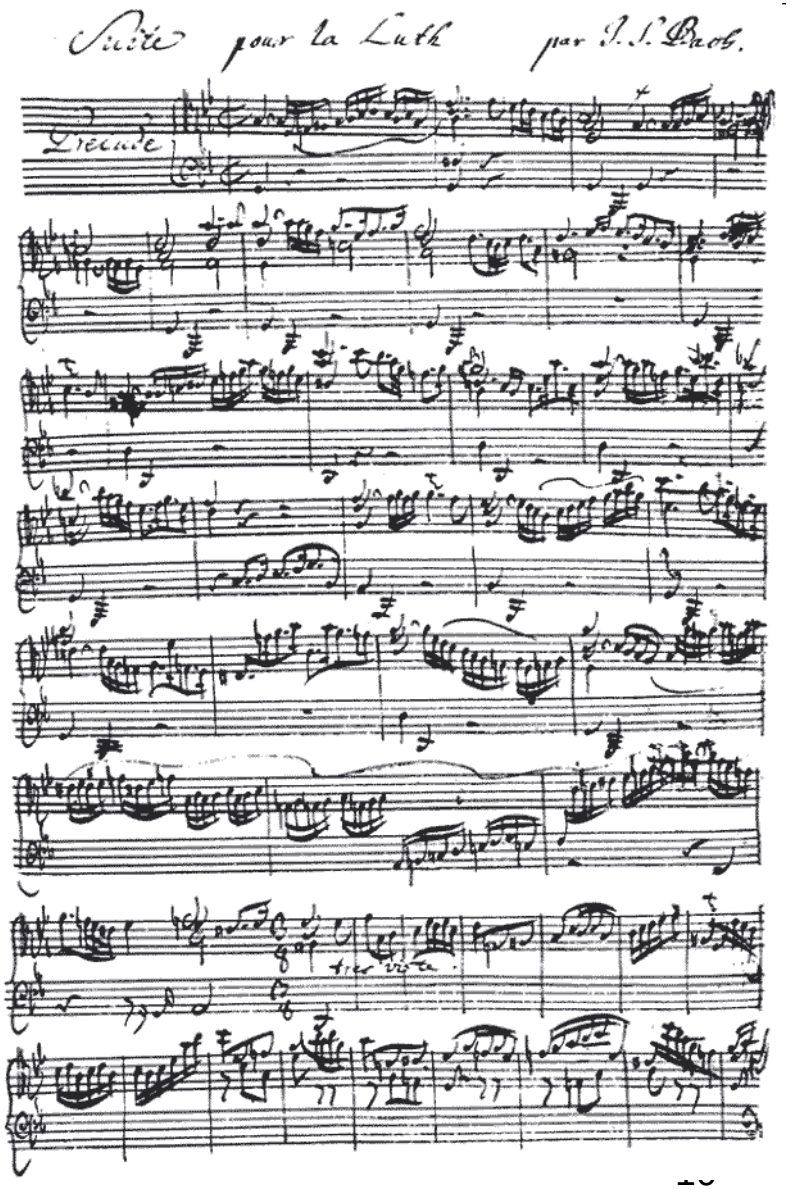
*) Marin Marian-Balasa: Who Axctually Needs Transcription?..., in The World of Music, vol.47(2) – 2005, S. 5 - 29

Music Analysis, Notation, Transcription (1)

Primary notation

→ somebody will play it

Example 1:
Hand-written musical notation by J. S. Bach:
beginning of the Prelude from the Suite for Lute in G minor BWV 995 (transcription of Cello Suite No. 5, BWV 1011)



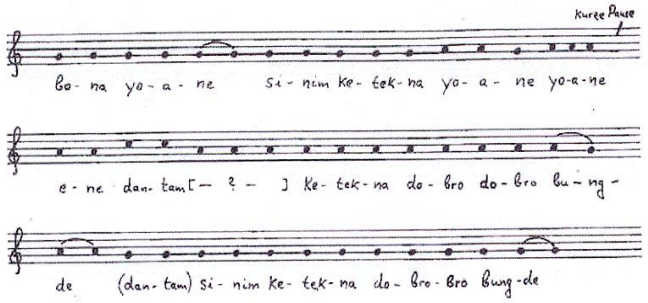
Music Analysis, Notation, Transcription (3)

Secondary notation

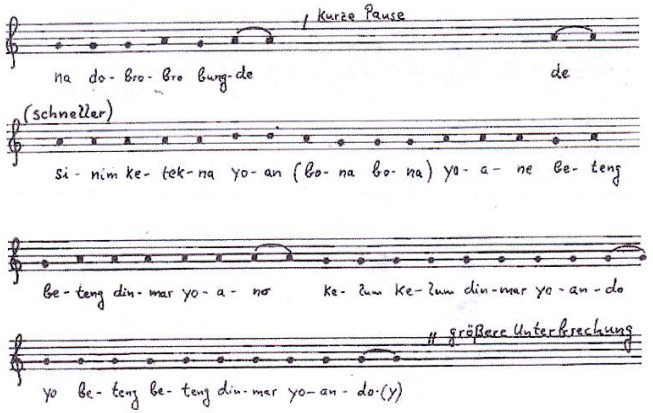
Transcription of monks singing

St. Galler Neumen,
between 922 and 926 AD.
contours only, no lines !

Transcription of Eipo singing



Musical information goes against zero …



Eipo dit „Yaltapenang“
Dingerkorn, ancestor worship ~1975

Source: 6 CDs: Eipo Gesänge, Museum für Völkerkunde Berlin

Machinery for music-ethological analysis (19xx)

Tools: „Appun'schen Tonmesser", resonance calibrated reeds (*Zungen*), for f_0 - determination (~1950)

„Stern'sche Tonvariator" based on blown bottles (angeblasene Flaschen) with variable pitch,

Travel-Tonometer with reed pipes, but pitch dependent on blast pressure,

Monochord, Tongeber, Uher Tape Recorder,

Tuning forks (*Stimmgabeln*) with sliding weights (*Laufgewichte*),

Melograph (Pitch, *Tonhöhenverlauf*), Sonagraph (*Spektrogramm*)

Tools for musicological evaluation 2010

- digital recording and
- PC - Software for music analysis

(Wavelab, Praat, Raven, Melodyne ..)

In terms of music ethology, the goal of analysis cannot be the reproducion of songs of the Eipo. It rather has to support our scientific analysis of the ethological meaning for the Eipo.

Important are the songs in their collectivity including

- text,
- context and
- metatexts describing situation (paricipant observation).

… and all those parameters which cannot be described with music notes, e.g. qualities of *Klangfarbenmusik, mélodie de timbres* (e.g. Frank Zappa, Messiaen and many more of the 60s of last century)

heavy, weighty, dark, weightless, levitating, dusky, eathy, resonant, rough, broad, hollow, stump, bulky, threatening, brutal, soft, broad, sustainable, aspiring etc.

and musical structures and forms.

Abraham / **von Hornbostel**: Proposals for the Transcription of Exotic Melodies (1909)

It ist high time to complete von Hornbostels important tutorial of transcription 101 years later…

My Proposition: Transcription and Analysis 2010

Make reasonable use of transcription with notes, e.g.

- **no complete transcription of a song, but**
- **rather of motivs / sogettos / themes / special features**
- **no notes of recitations on one or two or three notes**

Additionally, analyse, e.g.

- **musicological structure, interlock techniques, imitation etc.**
- **musical processing of motivs with textual correlation (cp. madrigalisms)**
- **analysis of melodic and rhythmical polyphony**
- **analysis of musical contours (up, down, floating..)**
- **analysis of individual voices and sounds and their effects**

Useage of SW Tools, e.g.

- **evaluation of typical pitches and phrases**
- **sound analysis for ethno-specific utterances**
- **modification of speed for easier text and music interpretation**
- **filtering, repetition, elongation of tones**
- **rhythm analysis e.g. with wavelet technique; random splicing**
- **analyse rhythmical polyphony, rh. layering, rh. counterpoint**
- **cognition of vocals by means of formant analysis**
- **analysis of musical phrasing together with text (leitmotif?)**

Four types of Eipo Songs (no instruments)

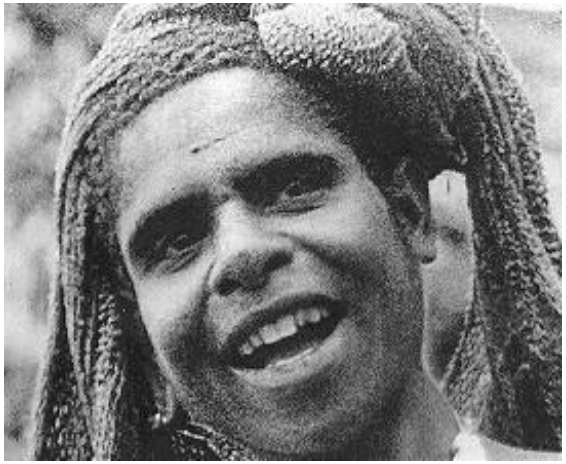
mot: men dancing songs,

dit: individual songs,

fungfungana: spititual healing rap,

layelayana: mourning songs

http://de.wikipedia.org/wiki/West-Neuguinea



Examples for new etho-musical analysis

1. transcribe musical motifs only, rather than an entire song
2. analyse motifs with SW tools
3. analyse special utterances with SW tools: heckle, interlock, vocal fry (Strohbass)
4. visualise tone contours and dynamics

Examples for new ethomusical analysis

1. **transcribe musical motifs only rather than entire song**

Textual contents of CD 1 / 1:

In a small village they expect guests fom a neighboring area. The dancers prepare for the meeting with funny and ironic songs regarding the expected people. They are coming that numerous that the ground vibrates. They are coming that fast, they forgot to wear the dancing decoration and they bring cheap stuff from a fern tree as their presents to us.

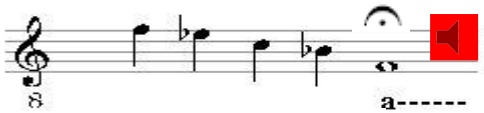
Then they sing about guests in general: about a lousy white chicken: missionars from the west brought to them. Then they sing about a certain kind of taro from their mythological genesis, about the drying-out of their lakes and the remaining puddles with mosquito larves and about the ducks of missionares. That is it about guests…

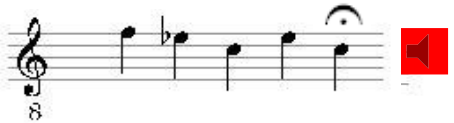
They sing about missing fortune (of their guests) in hunting. It follows an emulation of croaking of the koesa frog produced by women (a certain form of trill, called ngalamak)

More metaphers and symbols about the visiting fest follow. (Volker Heeschen)

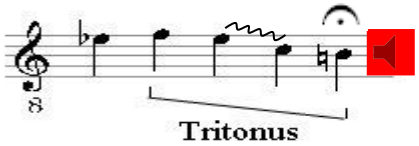
Mote Dancing Fest: CD 1 / No. 1 through CD 1 / No. 7

Four plus one motifs

a. 

b. 

c.

d. 

e.

First Analysis:

a) Declining contour, question

b) Floating contour, answer

c) Floating contour, Interlock Technique ?

d) Declining contour, Sophism with Tritonus !

Tritonus = *diabolus in musica*

e) „ngalamak“ = tonal hackling

in common in a, b, d:
voices converging towards „finalis“
„polyphonal staggered unison entry“

These motifs being used and modified in song 1/1 thru 1/7!
→ 7 „movements“ (…suite-like)

Source: 6 CDs: Eipo Gesänge, Museum für Völkerkunde Berlin, Ed. Artur Simon (165 records).

Example: Mote Dancing Fest: CD 1 / No. 1 (motifs) through CD 1 / No. 7

5 motifs are getting developed / processed / varied by Eipo improvisation:

- in a **rhapsodic** sequence of motifs,
- adaptation of motifs according to the amount of **text** (similar to the „8 Psalmodies“),
- **melismatic**[*)] variations of the motifs independent of text (aesthetical phrasing),
- variations regarding the **inset** of voices,
- imitations, canons, „**counterpoint-like**“
- variations of the paths towards the „**finalis**“ (e.g. towards the vocal „a“),
- motiv d) with an endtone on the **Tritonus** as sort of sophism *„Trugschluss“,*
- **combinations** of motiv d) with the finalis of motiv a) → Final, „*Ganzschluss“*
- **percussive** elements: lap-lap, made from grass. *Grasschürzen*
- **Occursus**[1)]-type endings of polyphonal lines: all voices eventually on one tone, „**Staggered Unison Entry**“ (term from Lorenz Welker)
- voices are (from our standpoint) earthy, rough, sometimes brutal, natural, …

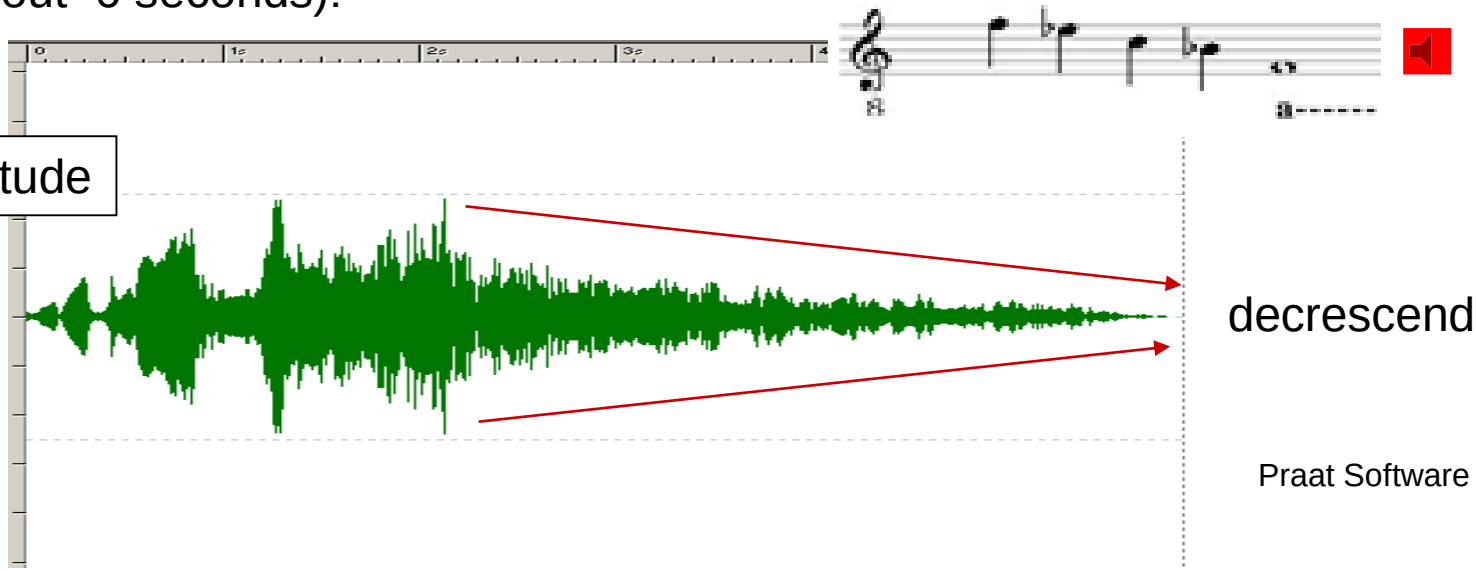
[1)] Occursus: concordant ending in medieval Organum polyphony

[*)] melismatic = melody without text

Examples for new ethomusical analysis

1. transcribe musical motifs only rather than entire song
2. **analyse motifs with SW tools**

motif a: (about 6 seconds):

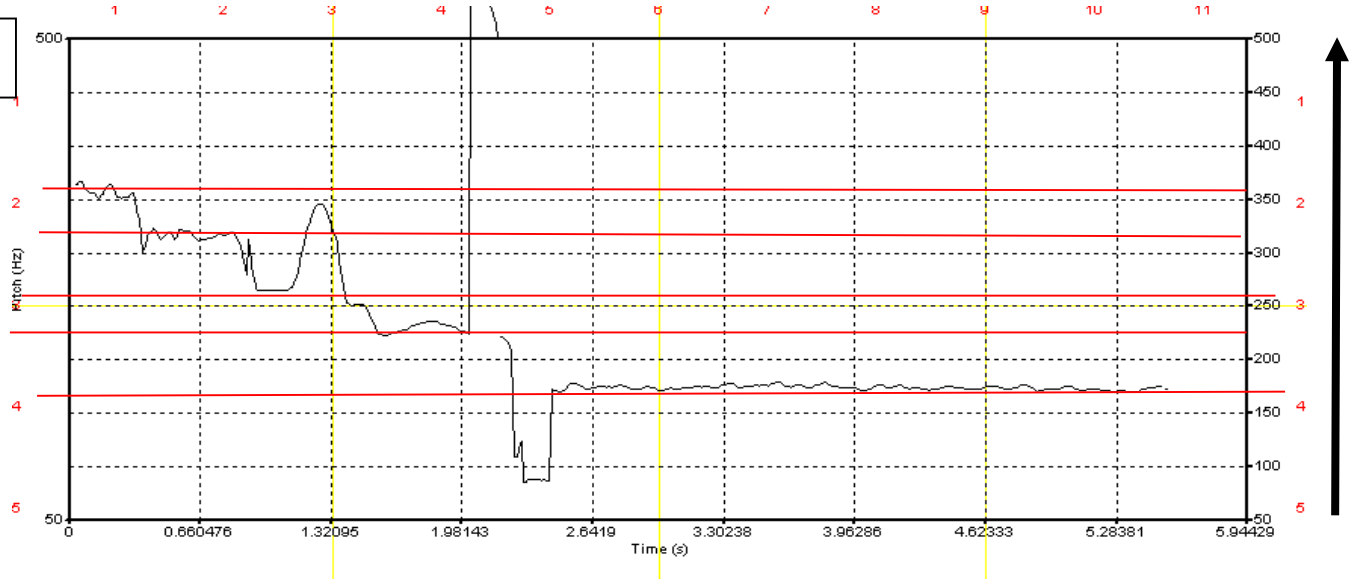


Signal Amplitude

decrescendo

Praat Software

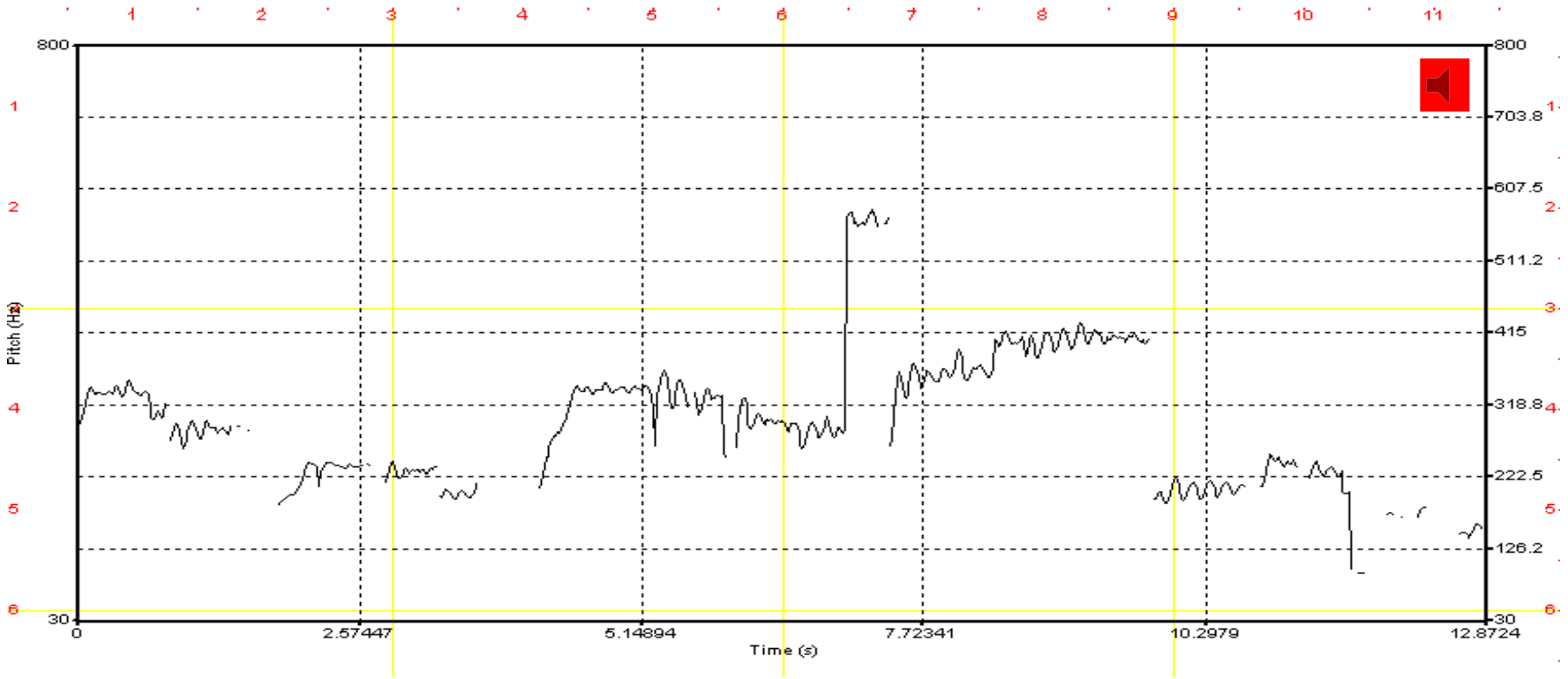
Pitch



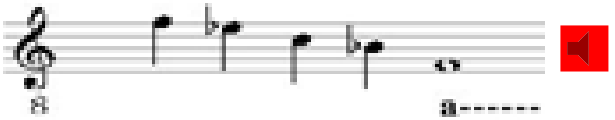
frequency

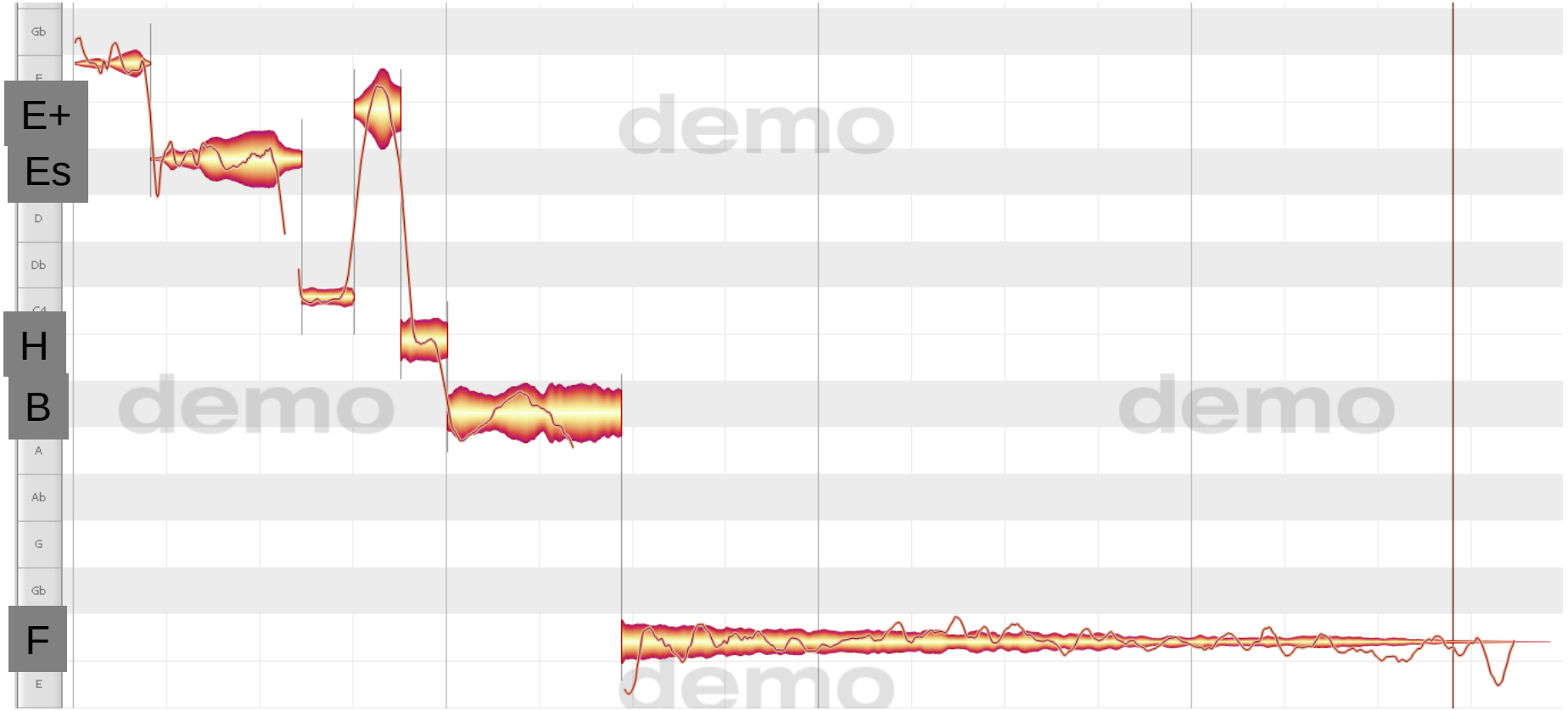
time

Singing: Comparison with Pavarotti



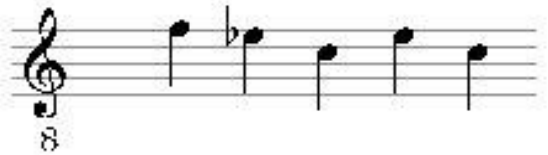
motif a: (about 6 seconds):



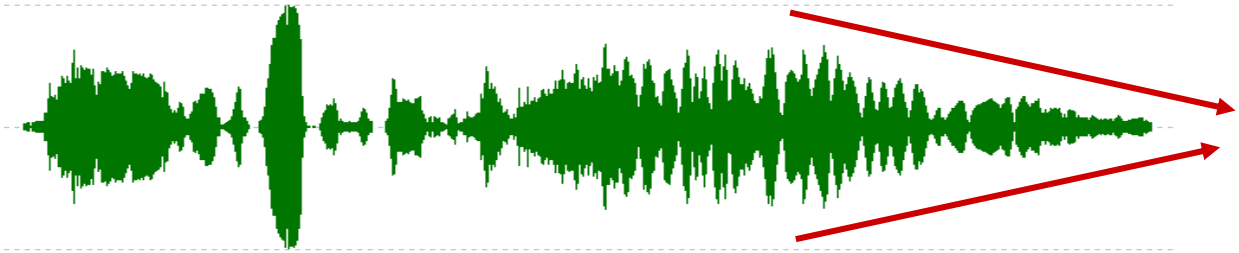


Melodyne SW von Celemony

motif b (about 7,7 seconds)

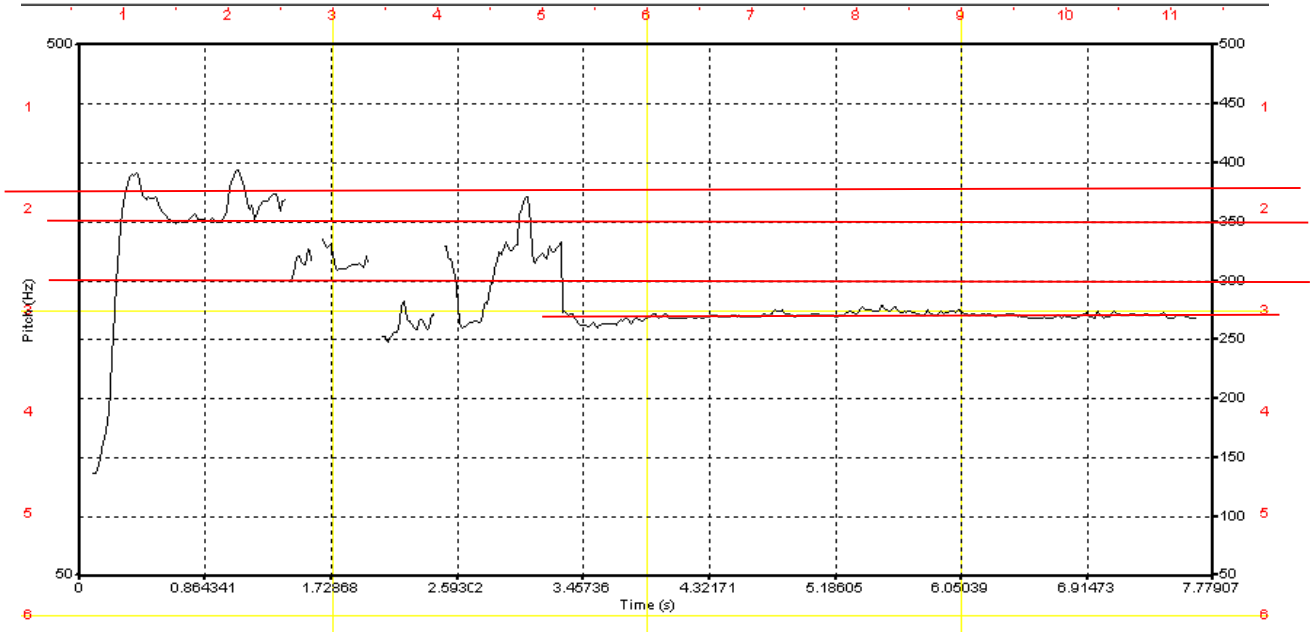


Signal Amplitude

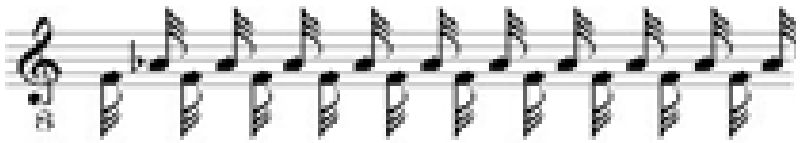


decrescendo

Pitch



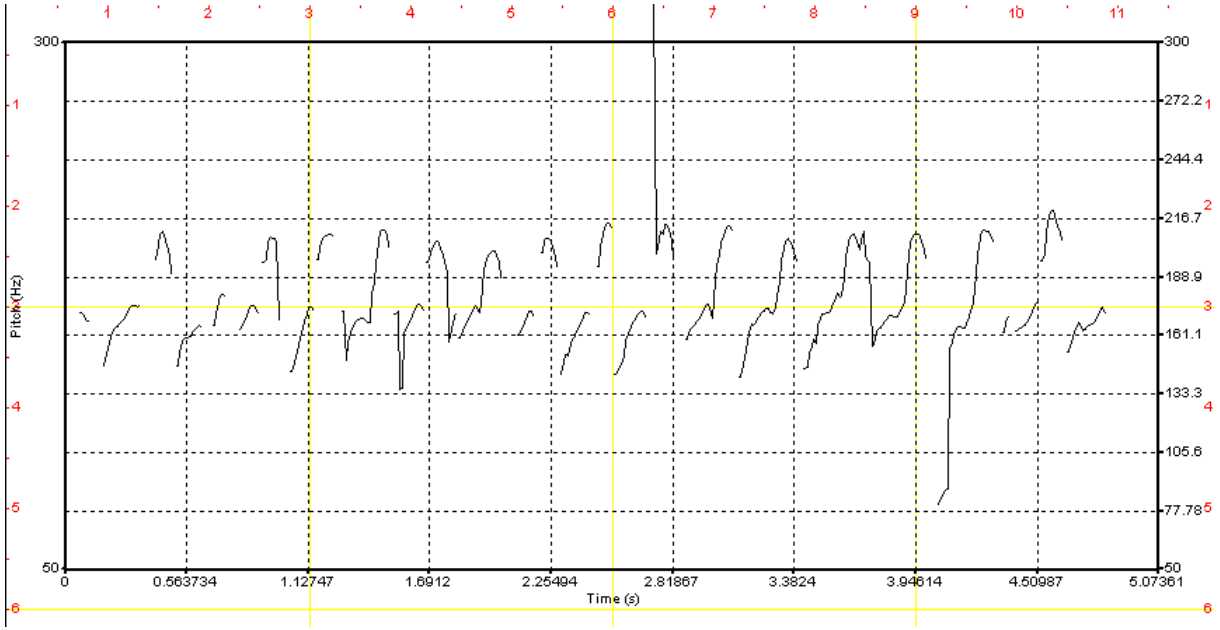
motif c: (about 5 seconds)



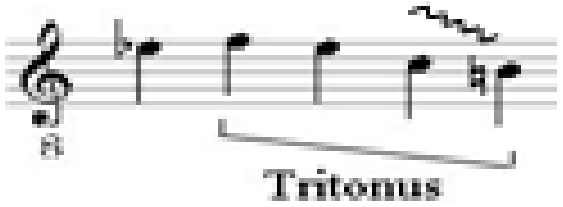
Signal Amplitude

similar to utterances of primates !

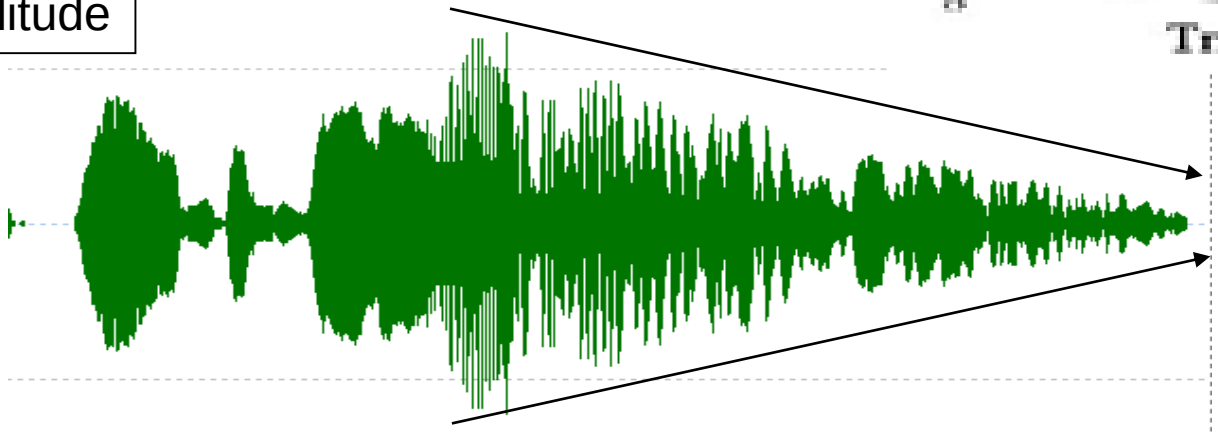
Pitch



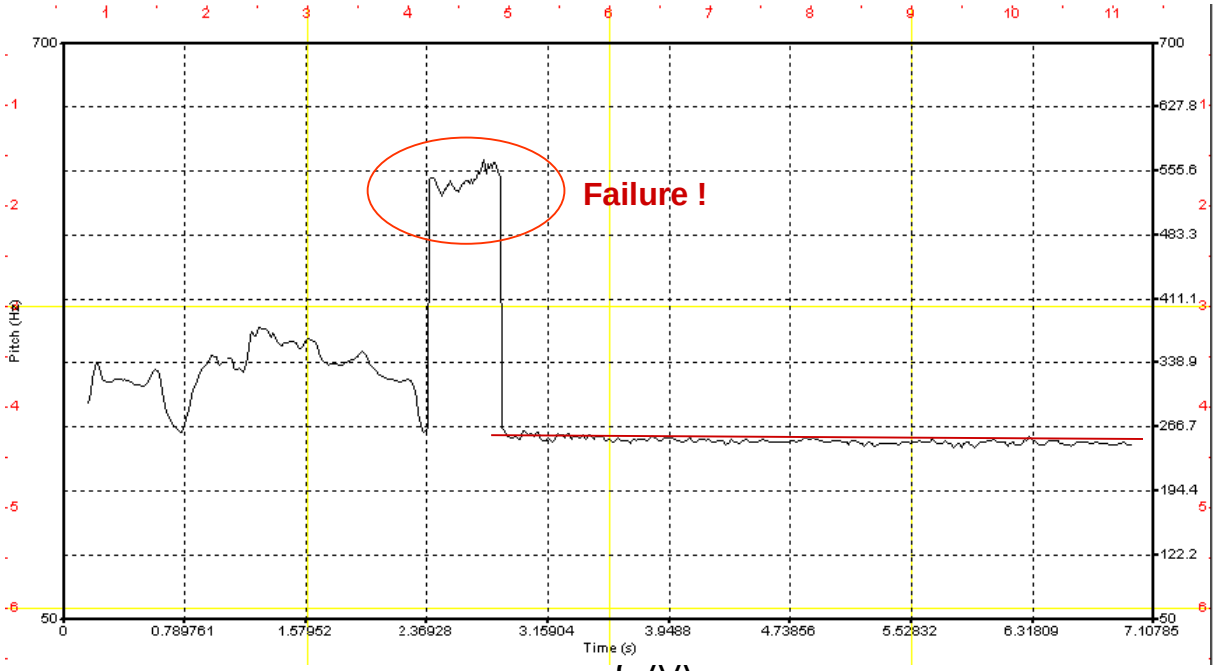
motif d: (about 7 seconds)



Signal Amplitude



Pitch

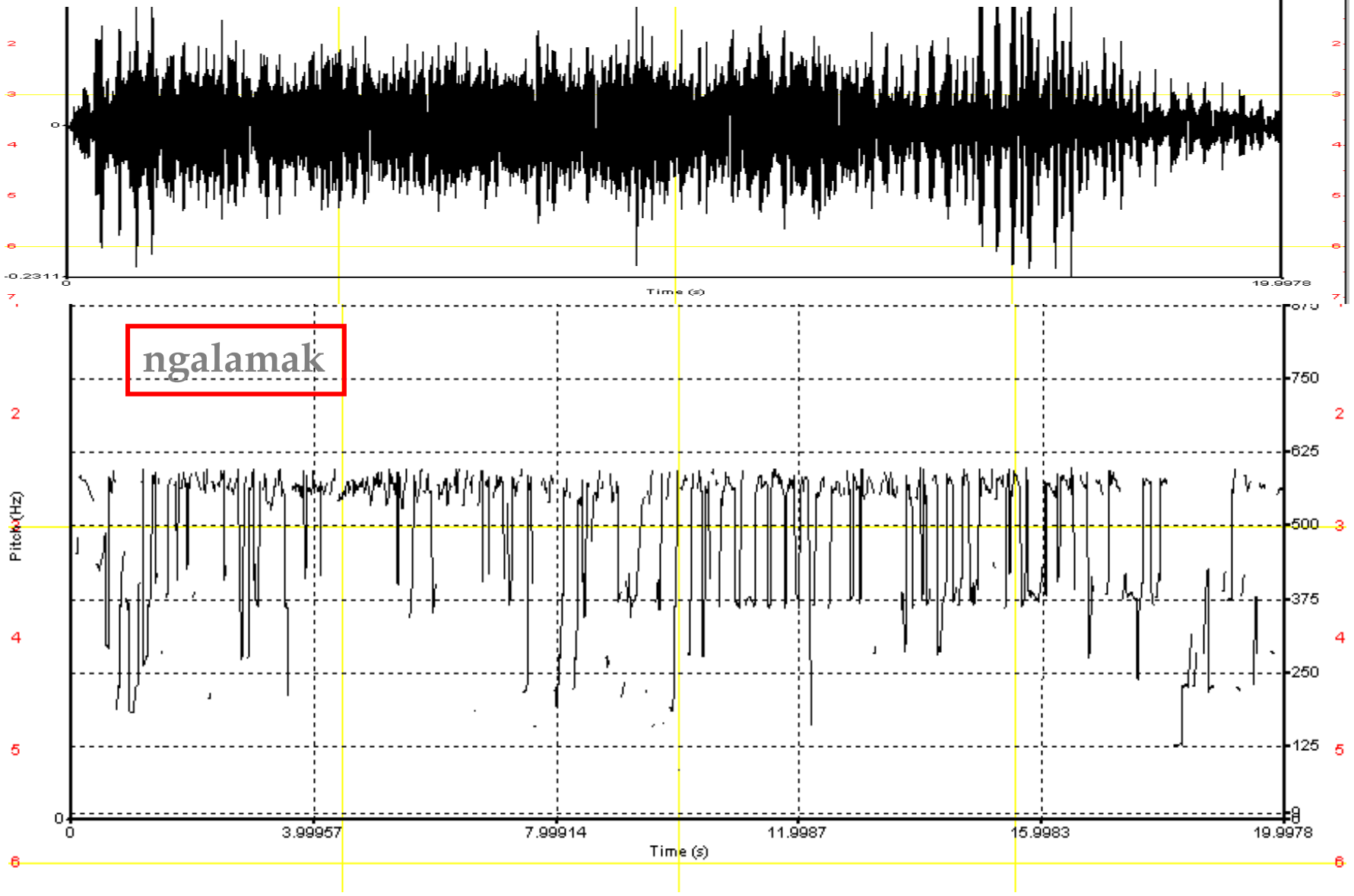


Examples for new ethomusical analysis

1. transcribe musical motifs only rather than entire song
2. analyse motifs with SW tools
3. **analyse special utterances with SW tools: heckle, interlock, vocal fry (Strohbass)**

women

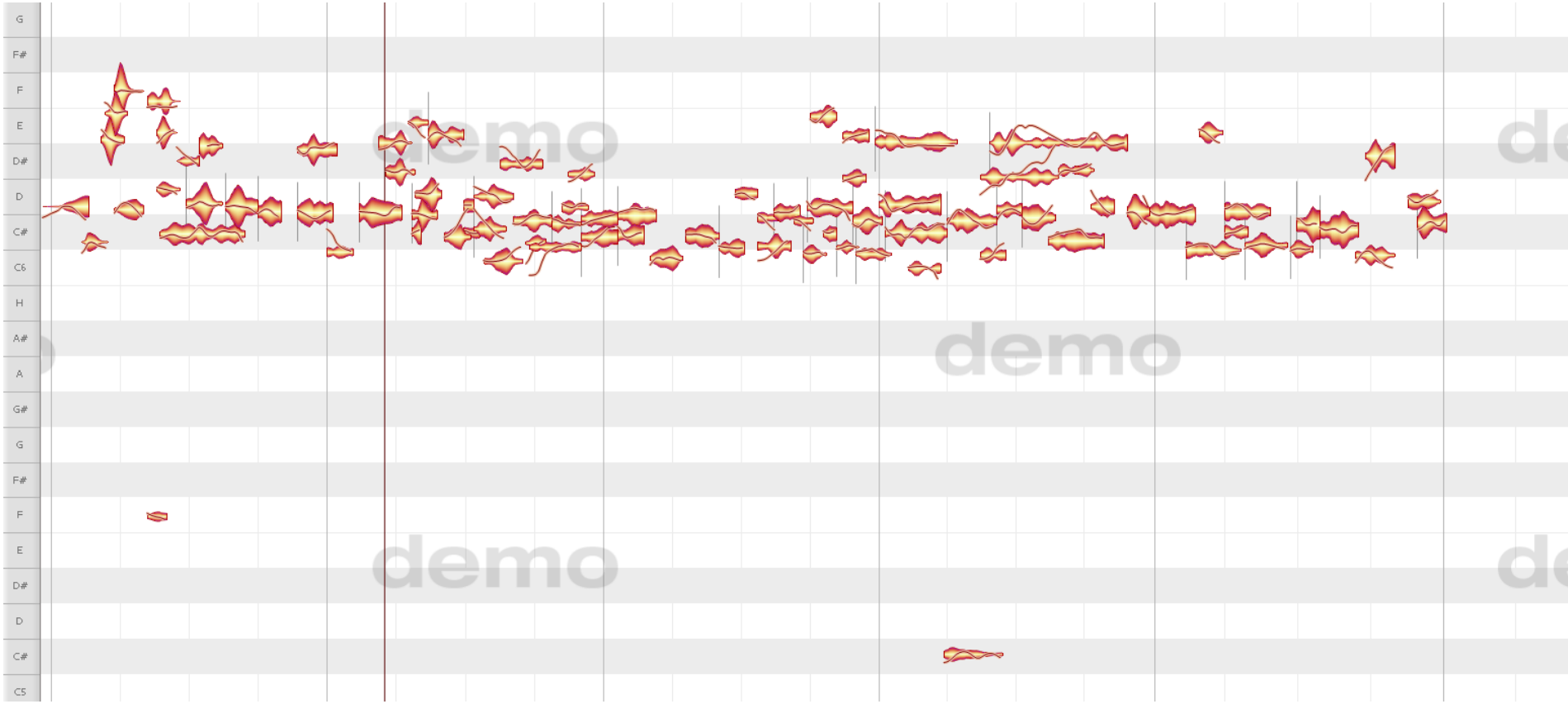
CD 2/1: Opening dance of visitors from Larye, about 20 seconds
women: Voiced heckle: transcription only does not make sense



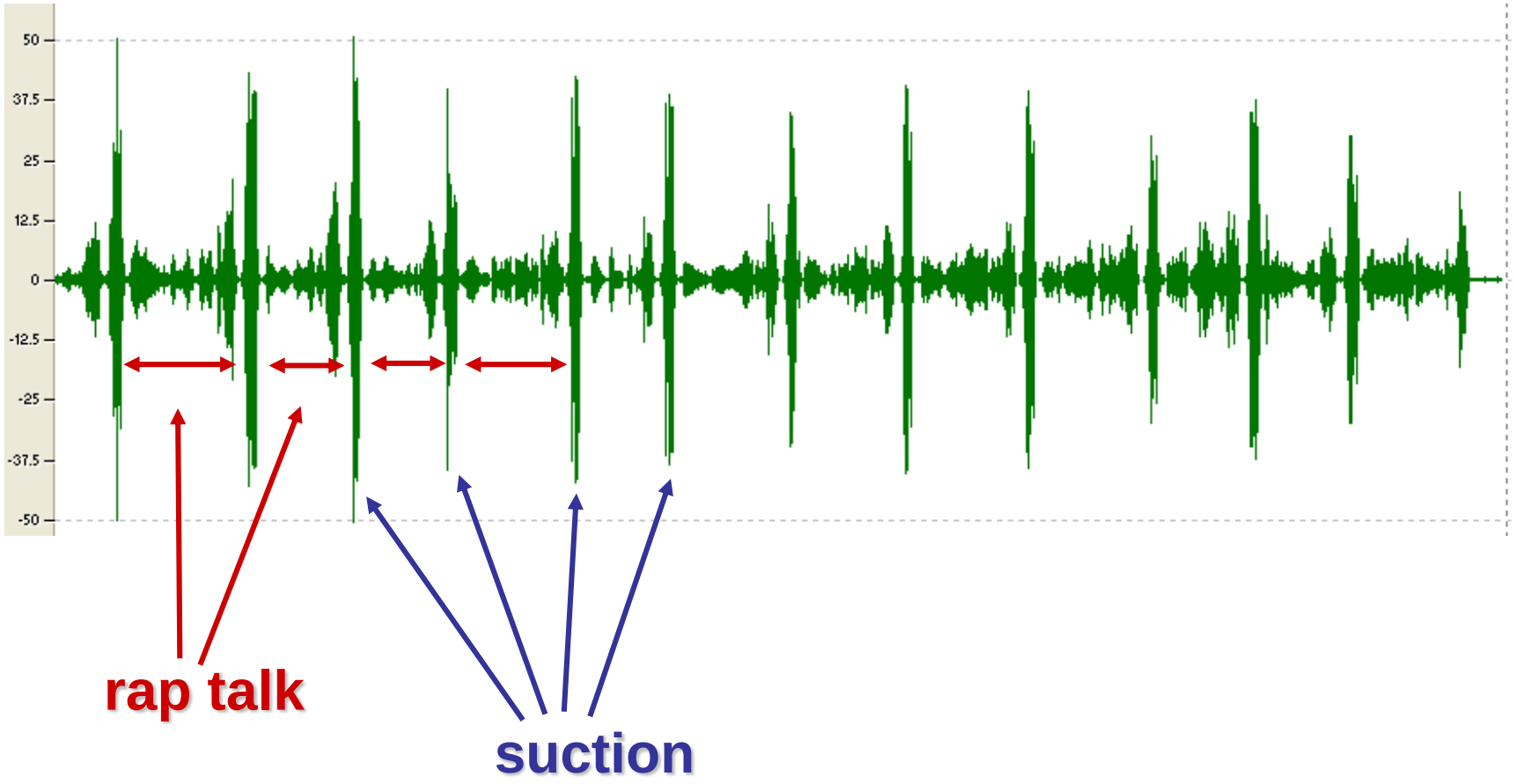
CD 2/1: Voiced heckle, analysis of polyphony

women

(with Melodyne from Celemony)

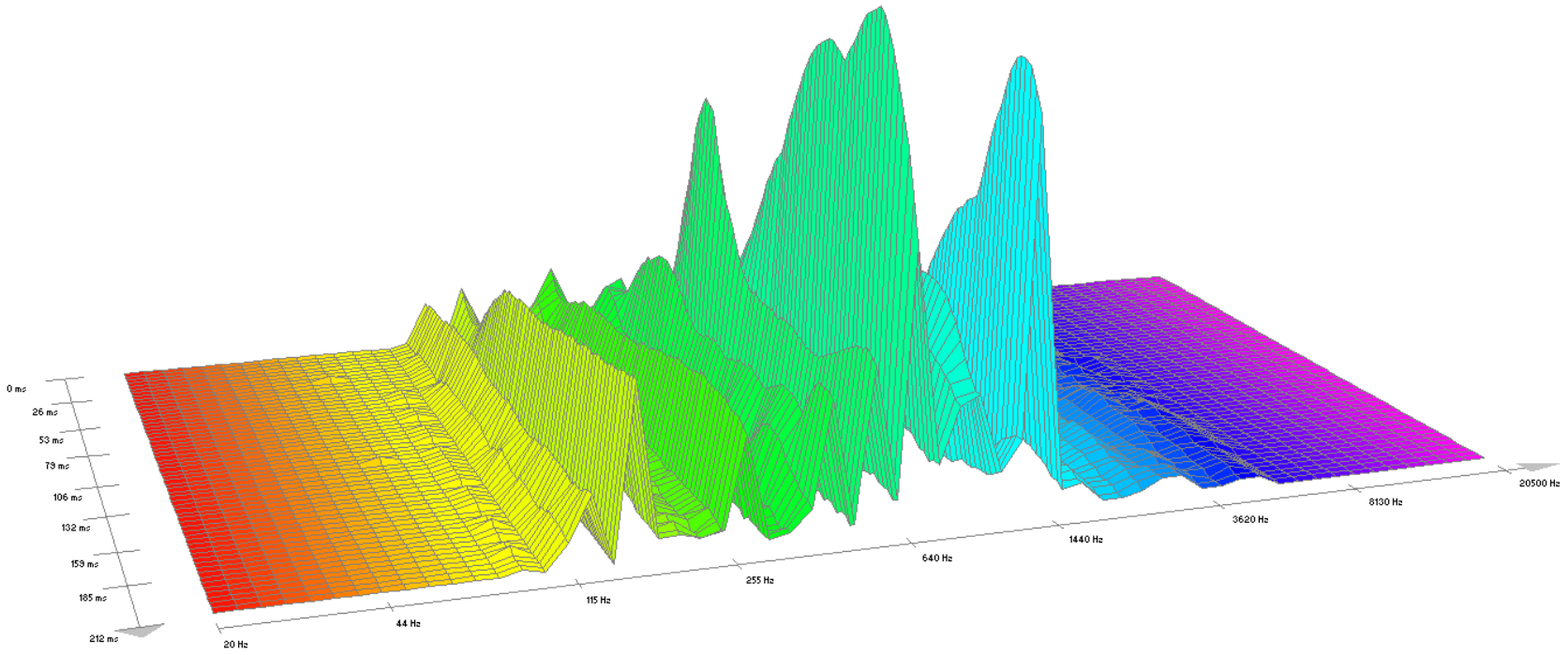


Fungfungana: spiritual healing rap



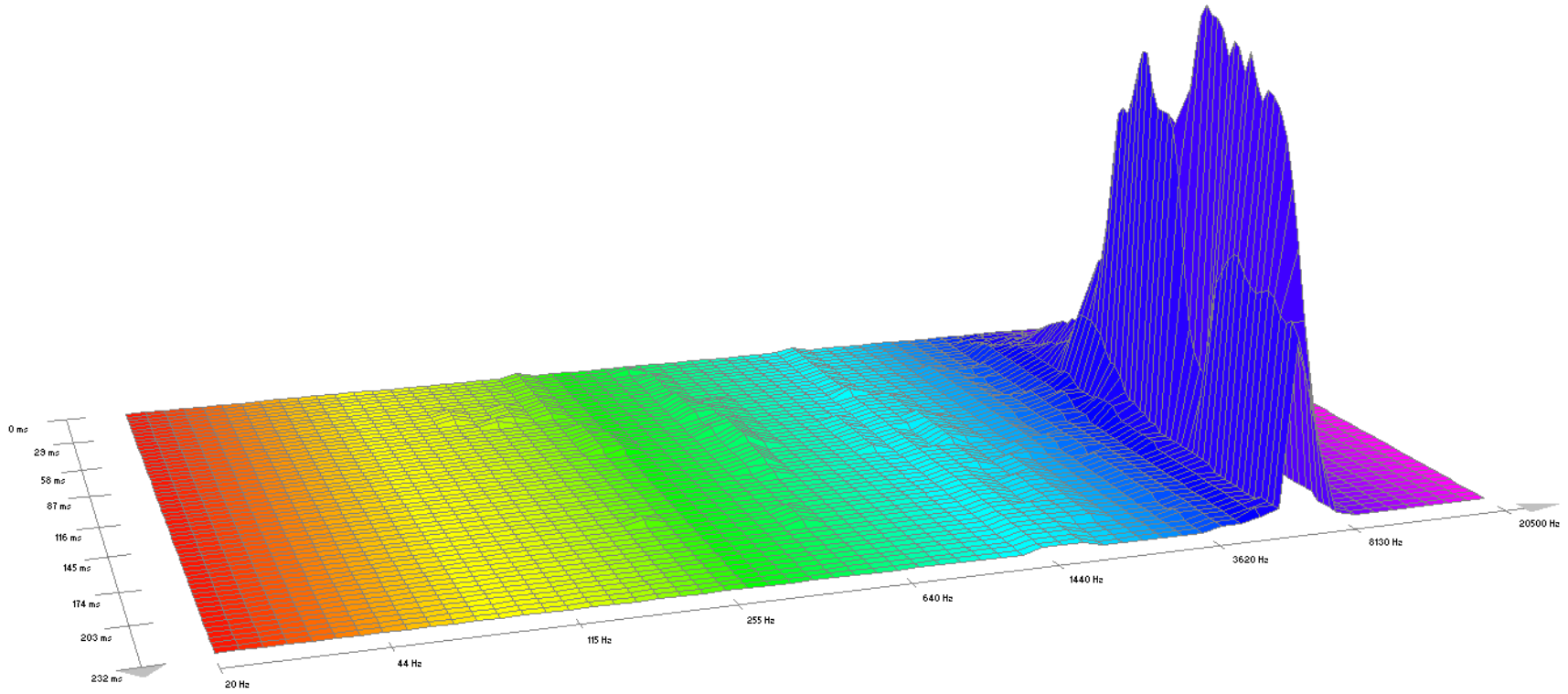
Fungfungana: spiritual healing rap

rap

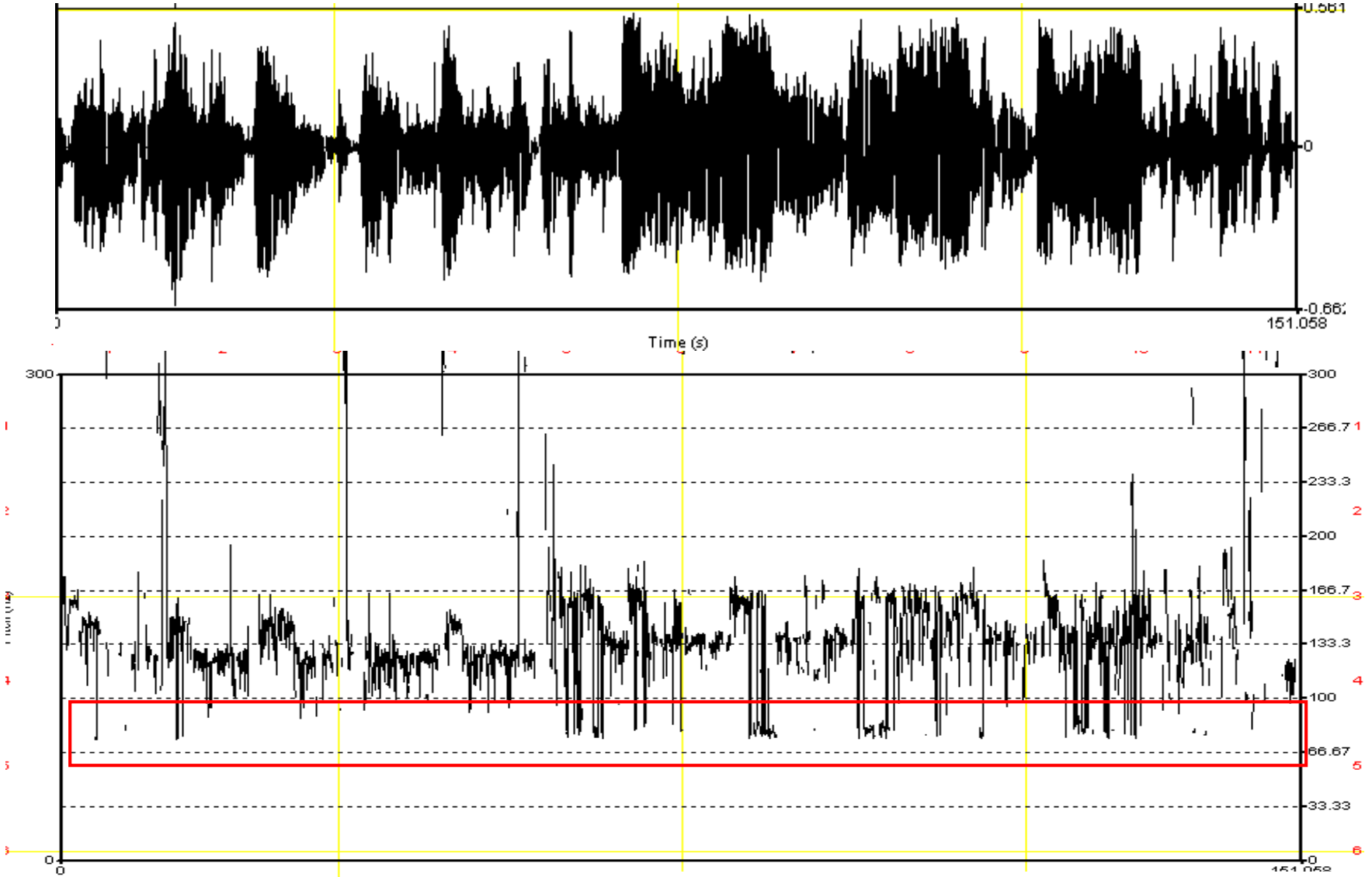


Fungfungana: spiritual healing rap

suction



Film example: Working song, from Nr. 2522“,150 sec.
pitch analysis; vocal fry areas (*Strohbass* utterance)



IWF Göttingen, Film Nr. E 2522: Eipo – Singen bei der Arbeit von Volker Heeschen

Film example: „Singen bei der Arbeit, Nr. 2522“,

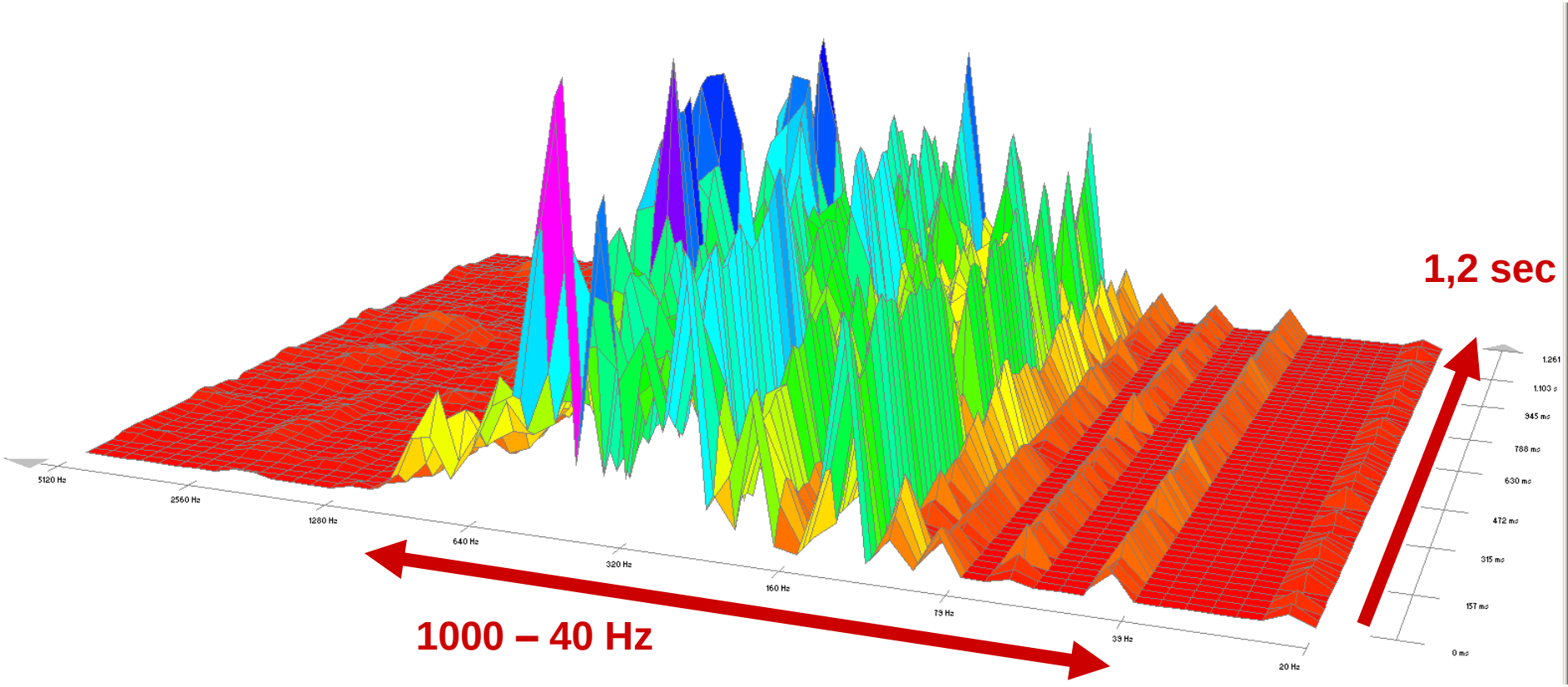
two tones out of song, multiplied for better analysis

tonal analysis: 130 Hz = 2 x 65 Hz, 1 octave

IWF Göttingen, Film Nr. E 2522: Eipo – Singen bei der Arbeit von Volker Heeschen

Beipiel 9: Strohbass

Spectral Analysis: shows a big number of high frequences → noise



Wavelab Software

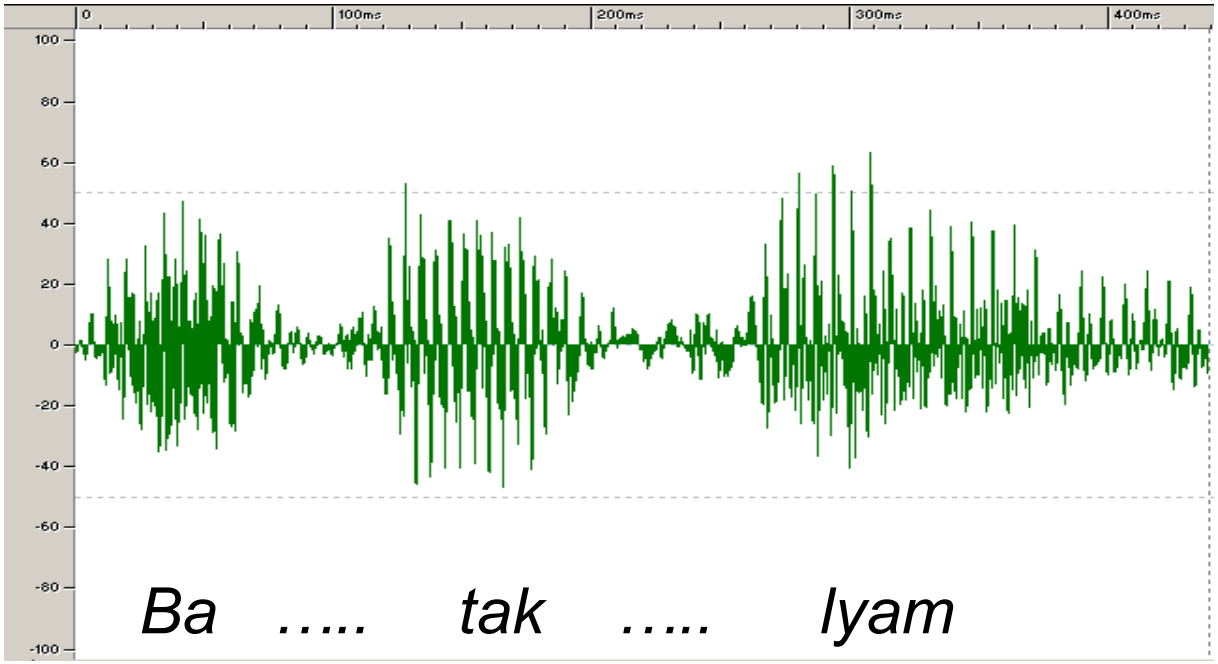
Example 5

Eipo - Language [1)] :
Interview by Volker Heeschen, recorded on analog music tape

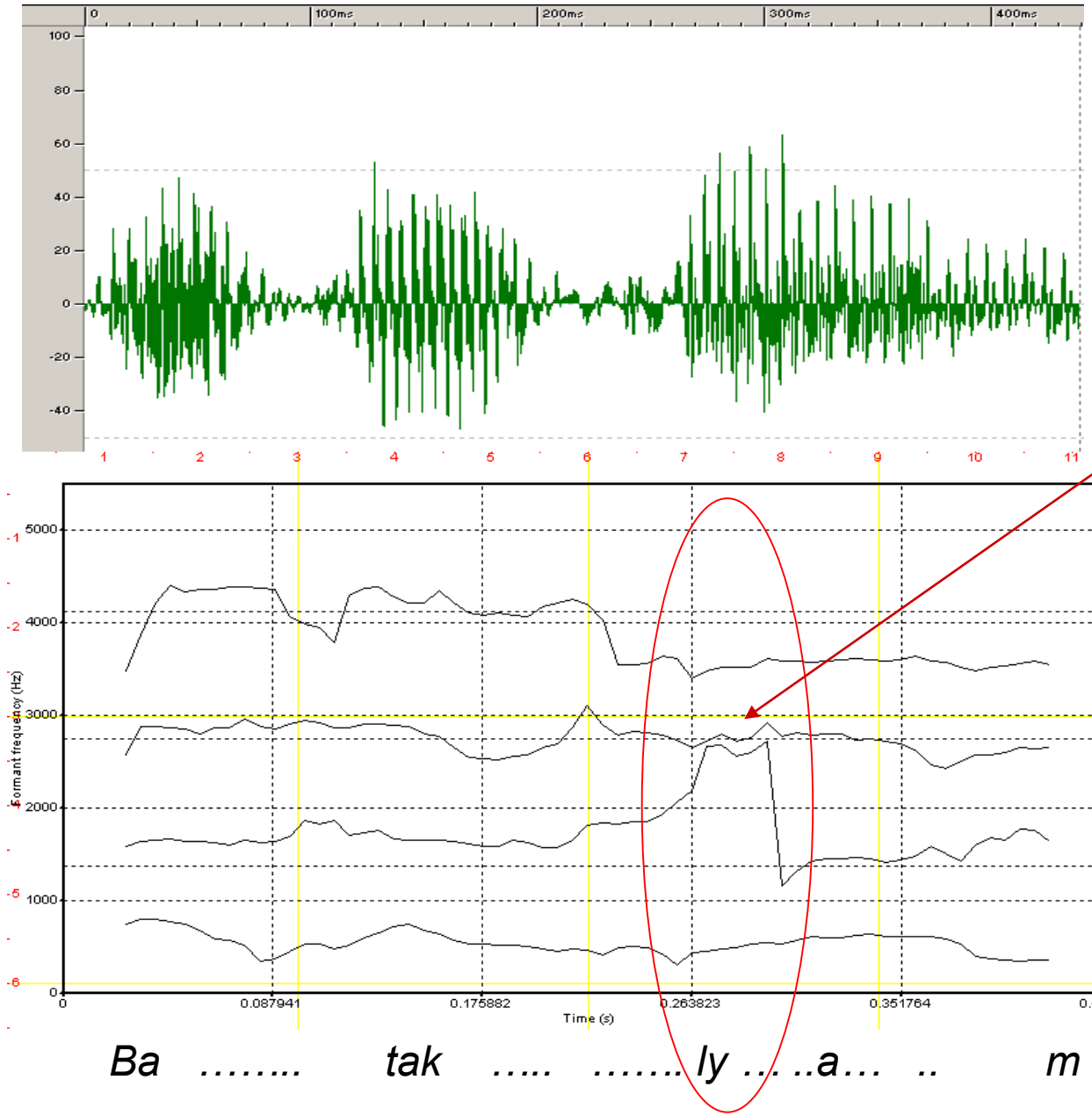
The word bataklyam!
meaning *„dont do it, let it be*!“

Find out the type of vowel!

→ Record (Original speed),
→ slower by factor 4: distortions!)



1) unveröffentlichte Tonaufnahmen aus Andechs



Ba …….. tak ….. ……. ly … ..a… .. m

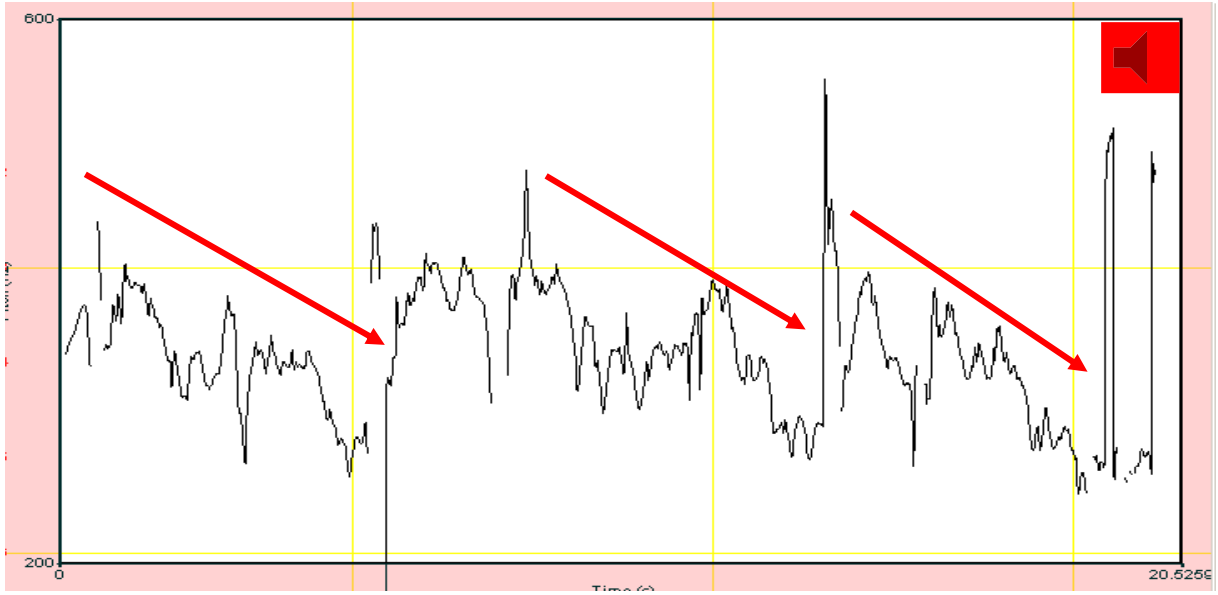
Tonaufnahme

Examples for new ethomusical analysis

1. transcribe musical motifs only rather than entire song
2. analyse motifs with SW tools
3. analyse special utterances with SW tools: heckle, interlock, vocal fry (Strohbass)
4. **visualise tone contours and dynamics**

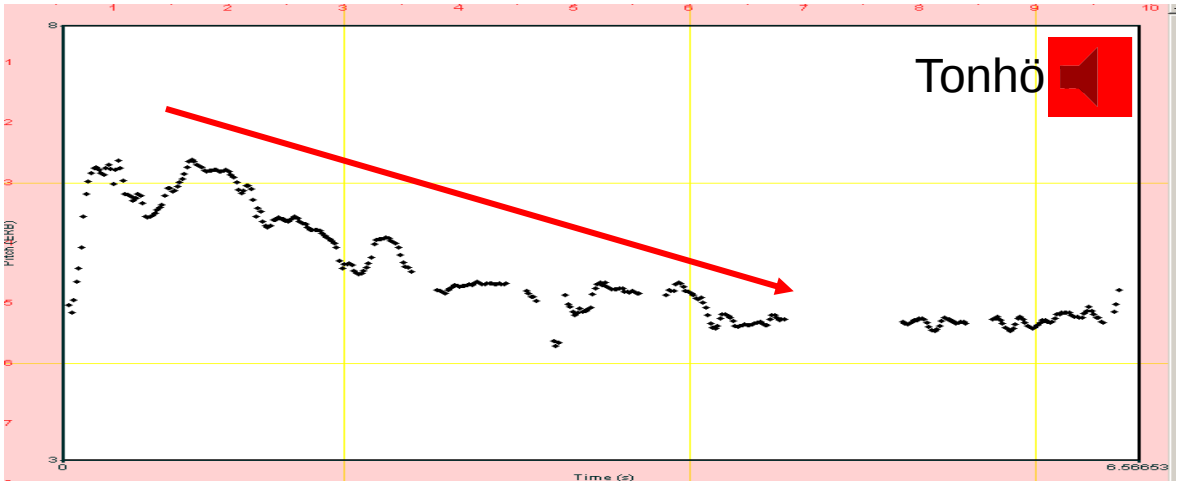
CD 3/14, mourning song, lalelayana, woman

Frequences around 350 Hz, first 20 seconnds



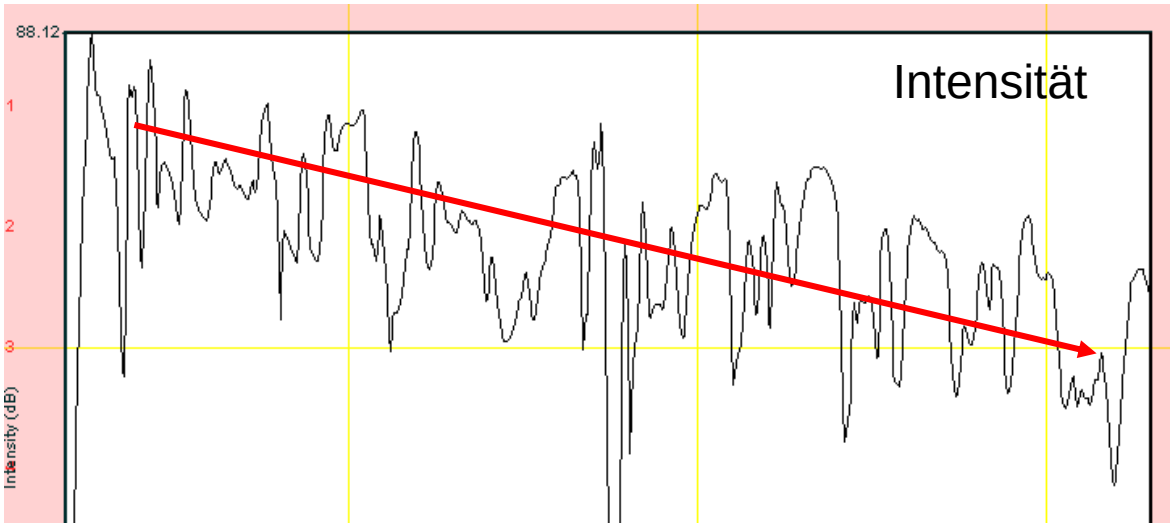
Falling Contour, a worldwide Universal for sad songs

CD5/18: Love song, type *dit (individual song), sad song ????*



Falling Contour !

Zeit

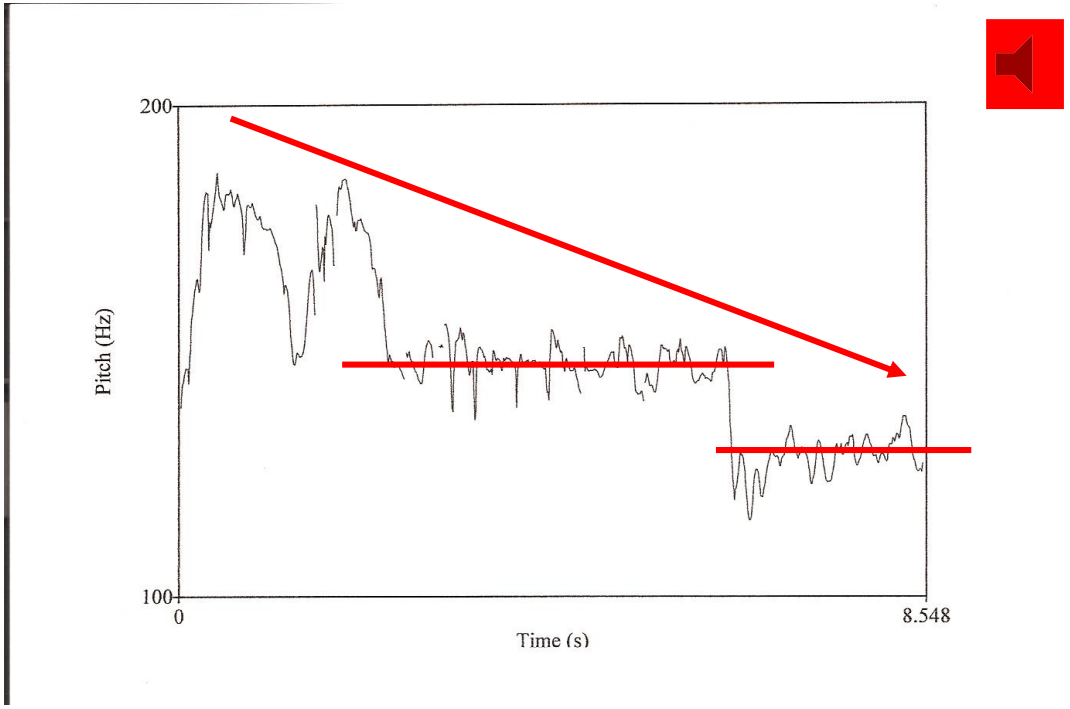


Zeit

Love songs of a man from Dingerkorn to his lover from Talin

Lied 5: CD4/18, original speed ¼ speed
first tone second tone third tone

First eight seconds

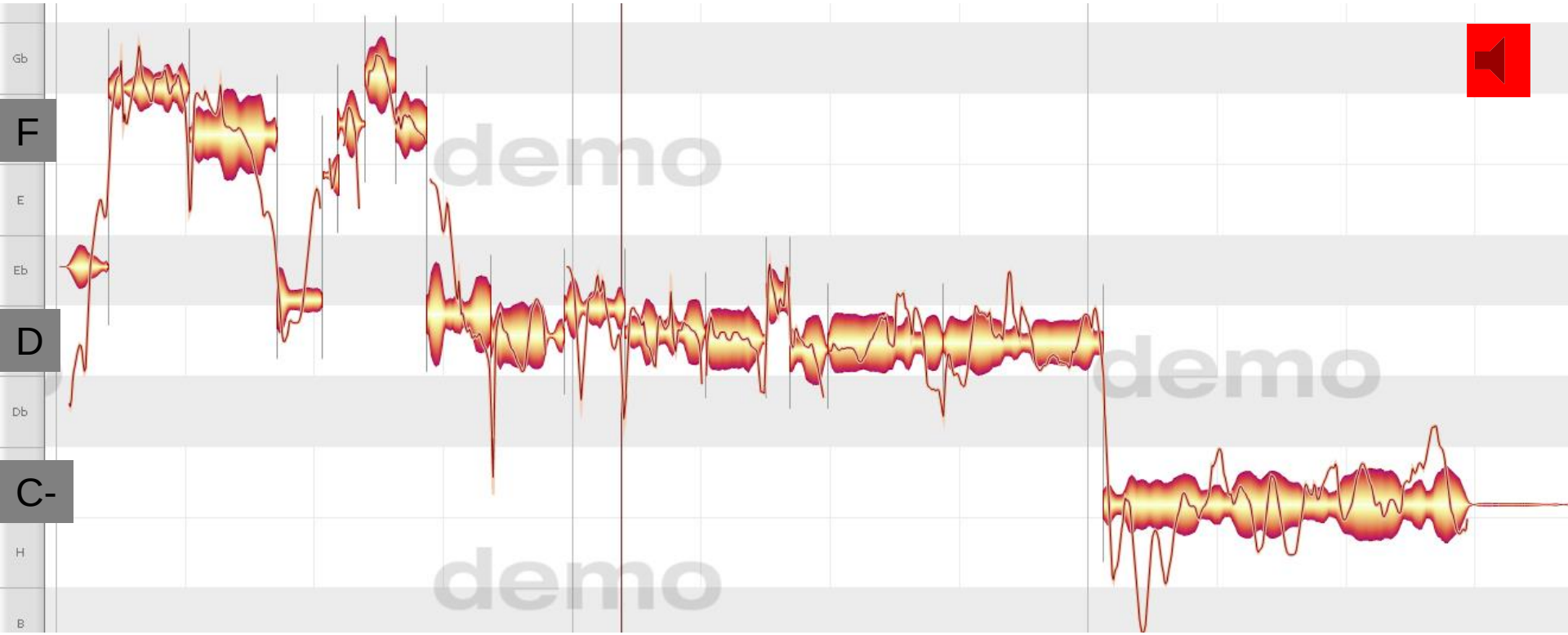


Melodyne

Same example, Litany-like piece 4/18 (10 seconds)

CD4/18

Transcription would make absolutely no sense here !

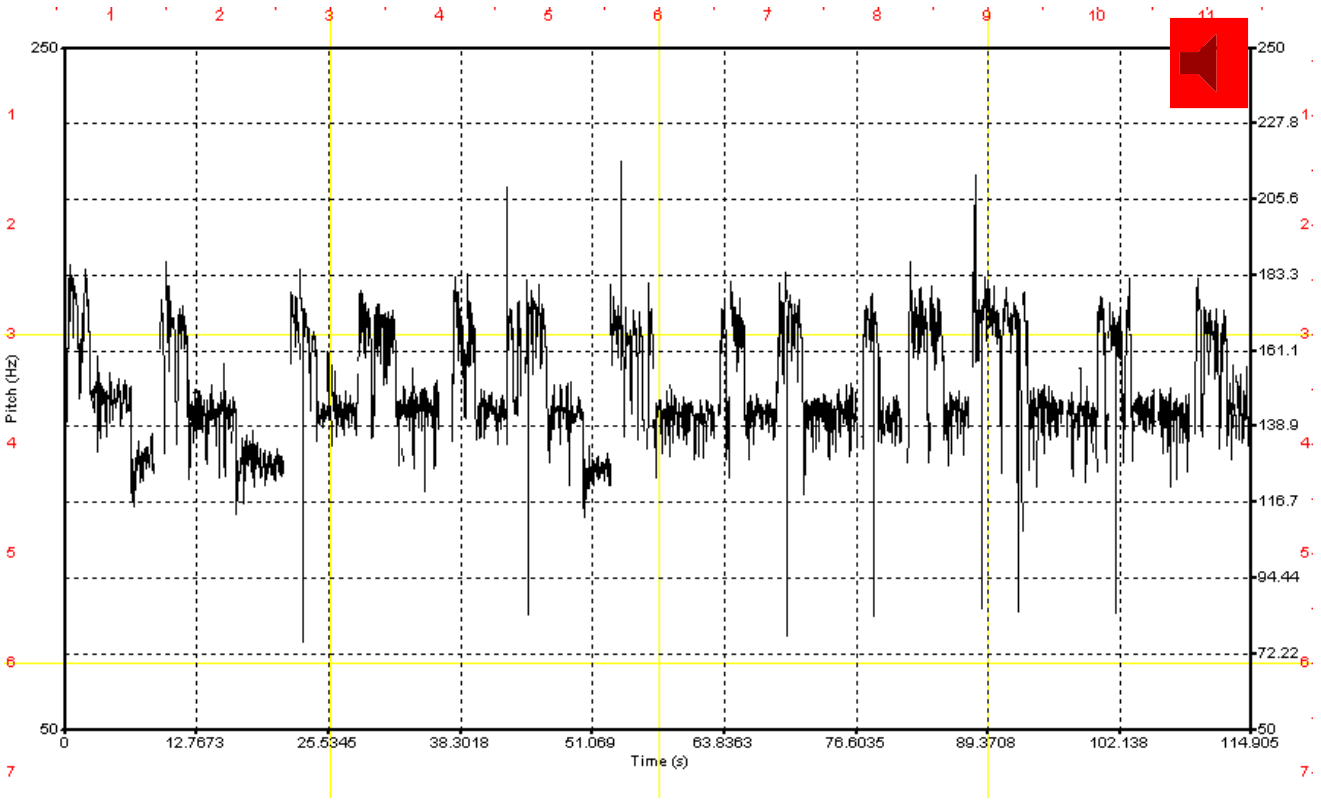


Repetition of words using about three recitation tones

Litany-like piece 4/18 (115 seconds)

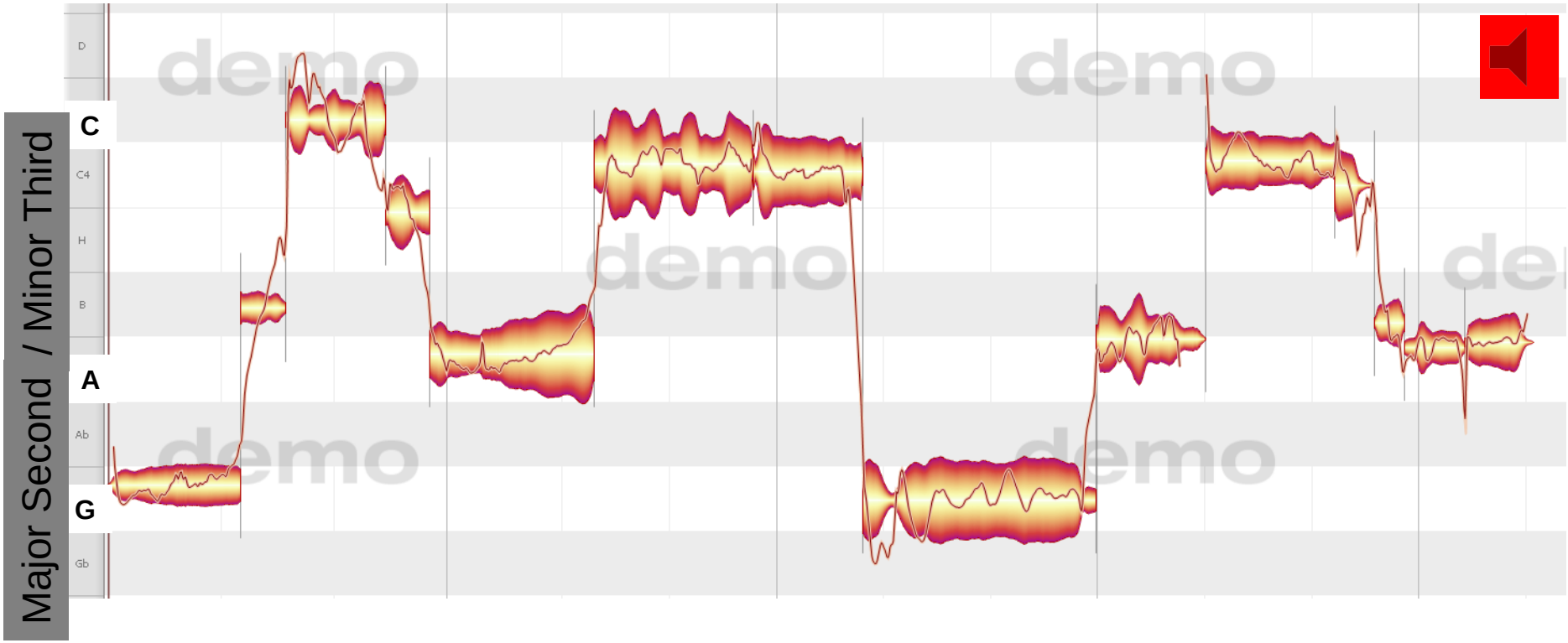
CD4/18

Transcription with notes would make absolutely no sense here !



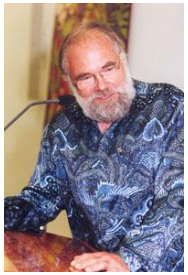
Repetition of words using three recitation tones

Last example: 5/15: Nalca Dit

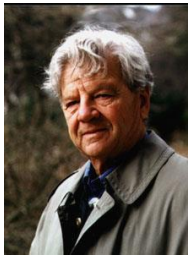
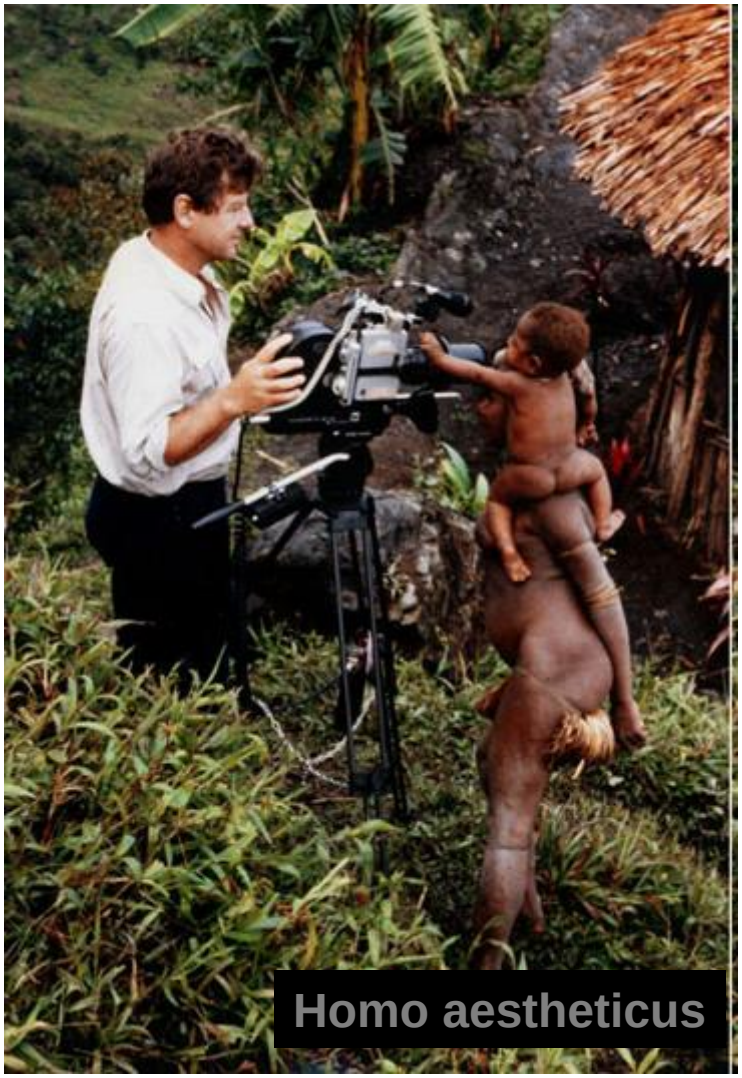


Pentatonic Melody

Major Second and Minor Third are universals !



Artur Simon



Eibl-Eibesfeld