



Education and Culture DG

Research
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music union

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„Plug & Speak: language learning with no time“

Emergence of language-decoding

WRITTEN decoding has been developed by Vera F. Birkenbihl. It has rapidly conquered an important language learning market during the last decade in Germany, Austria and Switzerland.

Based on recent brain research Music-Union has now developed **AUDIO** decoding.

Taking time for learning, sitting with books is no longer necessary. Audio decoding accompanies people during their daily occupations while this background music connects the words of the own and the foreign language in the brain.

How does foreign language decoding work?

The decoding technique makes the two languages merge in one place in the brain.

Traditional vocabulary learning stores the languages at different locations in the brain.

This is why 'swotting' was needed, because this grows cables between the words in the brain.

Also under the scull tangled mess of cables is no pleasure!

In addition, these cells consume more than 10 times as much energy as other body cells. Therefore, the brain disposes of them as soon as they are not used. In other words, what has been crammed for a test is forgotten soon. Audio decoding, however, is a so-called classical conditioning (Pavlov) which makes the foreign and the own word a neural unit in one place. This makes the words of two language echoing each other in the ear with. Vocabularies become mutual earworms.

It is a sensory process that happens also while pursuing other activities with the CD in the background.

The CD provides a kind of pool, the brain can freely choose from according to its preferences, instead of following the lines of a book. And this is, why it stores the foreign language in the part of the brain where our mother tongue is anchored.

These parts are not only the sustainable ones, but also the place for rules and their intuitive application. Therefore, we speak our native language perfectly before we've ever seen a grammar book.

What is the iTongue vision?

Whether economic growth, desert expansion, jceberg fading or coastal loss, we all have become neighbors in the global village and have to communicate. But honestly, who finds the time to delve into grammar books and learn languages beside a working life? Lacking verbal communication easily provokes violence to become a speech. Globally networking, post-industrial societies can no longer afford a lack of language skills. The ability "to learn foreign languages with no time" is essential for Europe's future and hereby for the Human Rights.

What are our steps?

- Applying recent brain research.
- Testing and continuous upgrading of the decoding techniques, accompanied by studies.
- Constitution and implementation of training for Language Decoder.
- Modular European qualification as Language Decoder by ECVET.



Audio Language Decoding

This guide focuses on the steps which are essential for foreign language decoding. The one who has general knowledge of sound processing beyond what is transferred here, is welcome to make good use of it.

The description is based on the Audacity software, because this provides all the necessary tools, it is free and it can compete with professional and expensive soft-wares. www.heise.de/download/audacity.html

It is recommended to print the instructions to be at hand.

Overview of relevant Shortcuts

Secure

Ctrl + S : save - **do it regularly in order to not lose what has been done**
 Ctrl + Z : un-do last step
 Ctrl + Y : re-do last step

View (size)

Ctrl + 2 : normal size
 Ctrl + 1 : zoom bigger
 Ctrl + 3 : zoom smaller
 Ctrl + E : fit in window size what has been selected
 Ctrl + F : fit the entire project in window the size

Search

If you lost the cursor:

Ctrl + E followed by Ctrl + 2 brings you back to place where you have just been working.

Search for a specific part in the sound file :

Ctrl + 2 followed by 3 times Ctrl + 3 in order to have appropriate size.

Then search by placing the cursor in various places in the timeline at the top (where the seconds are indicated).

You don't need to clicking on play (▶) each time.

Process

Ctrl + C : copy selection
 Ctrl + X : cut out selection
 Ctrl + Alt + X : cut out selected sound but keep the space as an empty space in this place
 Ctrl + V : insert
 Ctrl + K : delete selection
 Ctrl + Alt + K : delete selected sound but keep the space as an empty space in this place
 Ctrl + L : transform selection into pause
 Z : find Zero Crossing
 Ctrl + I : cut at cursor
 Ctrl + J : join selected cuts

Ctrl + Alt + V : add a note

R : record



Setting you project:

Essential: **create the file system of the project before starting and do not move any files or data later!**

1. Create the project folder on the PC and create inside another folder "*name-sound-processing*". Store the sound files in this file, open Audacity and save it in this folder under the project name (→ File → Save Project).

Creating traces

- Import into Audacity the files of the two languages: Menu top left → file → Import → Audio. Find the desired file, select → Open, → OK for "read files directly from the original".

- Create for each of the two languages an additional **trace**: in the middle of the Top Menu middle → **trace** → generate new trace, → mono trace (or stereo trace, if the imported voice-record is stereo).

- Save the created track by Ctrl + S

- change the order of the traces: click in the left-end field of a trace, hold left mouse-click down while pulling the trace up or down to the place you want. Make sure the 2 empty traces are together in the middle.

Processing traces

1. Select the audio trace

Put one of the two traces at the left-end of the line on "**mute**".

2. Make the other trace larger by pulling down its bottom-line to make waves more visible.

Later you do the same the other way round for processing the other audio track.

Working precisely

Work with headphones to hear the details.

Chose suitable visual magnification: Ctrl + 2 followed by first 1 times Ctrl + 1



1. Prepare a language unit

The language units are blue waves. In between are breaks.

Select the first unit; including thin waves at its beginning and end.

Listen to the unit (Menu top ►) and identify whether

a) there is noise.

b) initial or final consonants or syllables are too quiet; for beginners they have to be exaggerated.

Language teachers or daycare staff is aware of this need, but even professional speakers are not used to diction of this extend. Therefore, special attention has to be given to this during sound editing.

In texts for children, this diction is important even in the learners own language, to make sure children will not memorize rudimentary sound images.

If a) or b), or both of them apply, the following steps are to be carried out:

a) **Clean noises**

If there is a noise or a mistake, then zoom in (1 or 2 times Ctrl + 1), mark the area which precedes the sound and listen (Menu top ►) to identify exactly where the tone of the correct language ends and where the noise starts. Then the same at the end of the noise.

Then:

- Put the cursor precisely at the start of the noise (index finger appears)

- hold the left mouse-click down while

○ hitting briefly Z

○ pulling the cursor to the end of the noise

○ hitting briefly Z again

- then let go of the mouse click and press the backspace key to delete the selection, or press Ctrl + L to mute the noise and to keep the selected space.



b) Improve volume level

If a consonant or a syllable at the beginning or end of a word are not clear or loud enough, then identify its place as it has been described under a) for the noise.

Once the consonant or syllable is selected chose in the top menu → effects → amplifying.

There the slider used to be on maximum volume. Pull it down to the left side until a number between 2 and about 7 appears. For voiceless consonants, the number can be higher.

- The voice of the target language altogether rather a little louder than the voice of the learner's language.

2. Create gaps between the language units for recording the learner's language

Depending on the size of the text unit zoom with Ctrl + 2 to medium size or with Ctrl + 3 to make it smaller.

- go to an empty trace and select a clean space longer than the average text units and copy this space with Ctrl + C

- Set the cursor precisely after the end of a text unit (index finger appears)

- hold the left mouse-click down while

- o hitting briefly Ctrl + I
- o pulling the cursor to the beginning of the next text unit
- o hitting briefly Ctrl + I again

- then let go of the mouse click and delete the selection with the backspace key, immediately followed by inserting the previously copied clean space by Ctrl + V .

This way you replace the spaces between the language units by noise-free spaces of an average length

3. Place Language Units into decoding sequences

Do the following steps a) – j) by placing the units just roughly in their place. Precise placing follows after that

a) Select at the learner's language a version of the sentence that sounds most convincing and copy with Ctrl + C.

Go on the empty trace in which you wish to operate this language. Let's call it "operation-trace"

There you insert this version with Ctrl + V at the beginning to make sure the learner understands the context of the text right from the start.

b) Then you select the slow word-by-word version of the learner language and copy (Ctrl + C) and paste it (Ctrl + V) into the "operation-trace" allowing a little gap (about 3 seconds) after the sentence you had just placed there.

c) Do the same with the word-by-word version of the target language and place it in the "operation-trace" of the target language. Make sure each word of the target language follows the respective word of the learner's language. If the spaces between the words are not sufficiently long or have noises, you can create the respective clean gap-length by the function described above at "2. Create gaps..."

Once the word-by-word version of the two languages are correctly synchronized, copy both of them at once, allow a little gap of about 3 seconds and then paste them together again in the "operation-trace" as a repetition.

c) After this you will allow a gap that is slightly longer.

d) Now you select a part of the sentence in the learner language and place it after this gap

e) Then you select the respective part of the sentence in the target language and place it right after.

f) followed by the slightly longer gap (approximately up to the length of what had just been heard in the target language)

You repeat this with the different voice-versions of this part. Make sure the sound and melody of the two languages follows each other as matching as possible.

g) then you do the same with the entire sentence using the proper syntax of the learner language

h) each language pair followed by a gap approximately up to the length of what had just been heard in the target language.

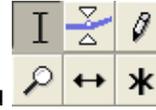
i) At the very end the different versions (melodies) only of the target language follow each other with small gaps between them.

j) now a long gap puts a distance between this sequence and the respective sequence of the next sentence.



4. Placing and synchronizing language units precisely

In order to fine-tune the synchronized placement of the decoded language units



click once on the sliding feature: double-headed arrow ↔ in the top menu

With this tool you can move the units as you like. (To free your cursor from that too, click on  there)

To summarize: average number of repetitions (see tables page 4):

After the introductory sentence in the learner language

1st The synchronized word-by-word version 2 times; music between the two.

2nd parts of the sentence (for example between commas) each 2-3 times, music after each language pair.

3rd The entire sentence 2 times in both languages; music after each language pair

4th only the target language 2 – 5 times with short music between.

5th Long music to finish

For long and complicated sentences more repetitions, for very short sentences less.

5. Vary

To avoid the brain going on stand-by-modus, but to reinforce the neural capacity, repetitions should be varied.

If the speaker has not produced sufficient varieties, you can change pitch and speed to make a difference:

- changing the pitch: Top Menu → effect → change **pitch**,
- Changing speed: Top Menu → effect → change **speed**
- Or change the volume: Top Menu → effect → **amplify**

6. Music

The way you have imported the language files, you now import the music file : Menu → file → Import → Audio.

Find the file, select, → open → OK for "files directly from the original"

Ducking the music



Select the envelope function (blue line) 

Set by right-clicking points along the bright field and move them up and down to change the volume of the music according to the volume of the voices. To make it louder during the gaps, a jumps shape is recommended: grow the volume with a curve and take it back down relatively steep.

(To free your cursor from that too, click on  there)

7. Export

Export each trace once separately by muting the others and export them once mixed together

→ File → Audio export → WAV, or select mp3, → file rename, → create a folder in the sound-processing folder of this project and call it "...project-name... exports" → Save

