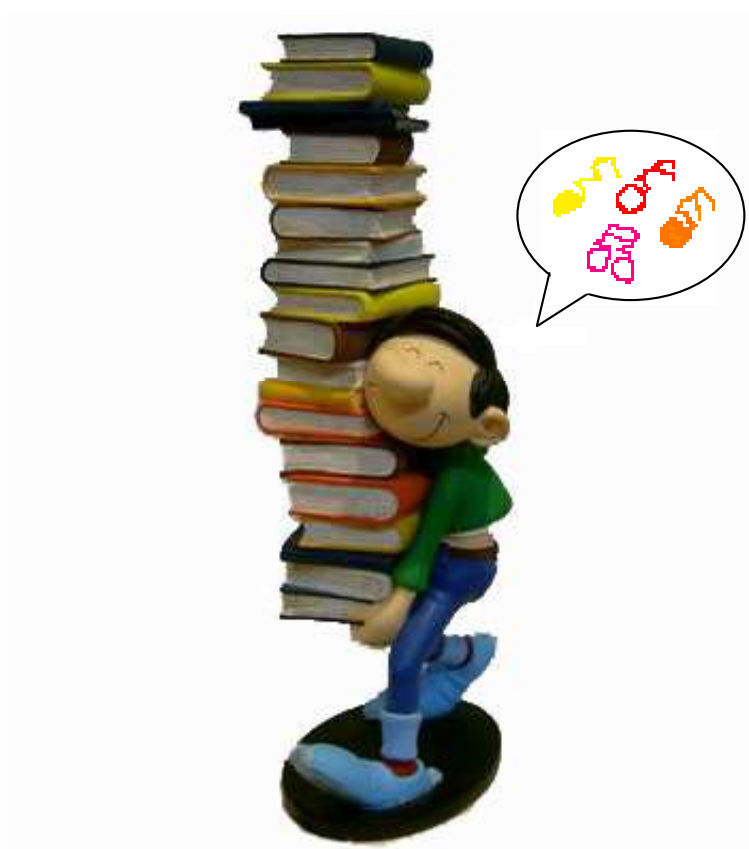


Speech rehabilitation



Speech rehabilitation is “n°2” because it is my second specific rehabilitation in Optimize your rehabilitation !.

2. Speech

**Rehabilitation thanks to therapy sessions : 35% - of which, at the center, 8% -
Personal rehabilitation : 65%**

Summary

INITIAL SITUATION		Speech almost incomprehensible <i>Nil ability to communicate</i>
Causes		<ol style="list-style-type: none"> 1. Tongue sheared, then sewn back 2. Lower jaw completely broken, then reformed 3. Cerebral Vascular Accident (CVA) 4. Damage to the cerebellum, which modulates speech
REHABILITATION MEANS	<u>Ther. sessions</u> <u>35%</u>	Sessions with speech therapists I, II and III : - elements regarding my rehabilitation case - exercices
	<u>Personal</u> <u>65%</u>	<ol style="list-style-type: none"> 1. Flexing tongue while watching movies. 2. Writing my own speech rehabilitation words and phrases. 3. Reading books and magazines out loud, and also my bedside book. 4. Singing karaoke songs. 5. Using for a period the internal house function of the phone for speechwork sessions. <p style="text-align: center;"><i>"Pure speech rehabilitation" rehabilitation mode</i></p> <ol style="list-style-type: none"> 6. Reading theatre plays out loud, to regain the ability to express tones and articulations. 7. Reading poems o.l., to fine-tune speech sounds and articulations. 8. "Controlled" reading o.l. of texts, to make speech amplitude even. 9. Reading homophone verses o.l., for advanced fine-tuning of speech sounds. 10. Reading complex phonetic sentences o.l., for advanced fine-tuning of articulations. 11. Reading speeches o.l., to regain "regular" speech.
Duration		4 years 7 months
FINAL SITUATION		"Regular speech"

Initial situation

My speech could scarcely be understood. It was :

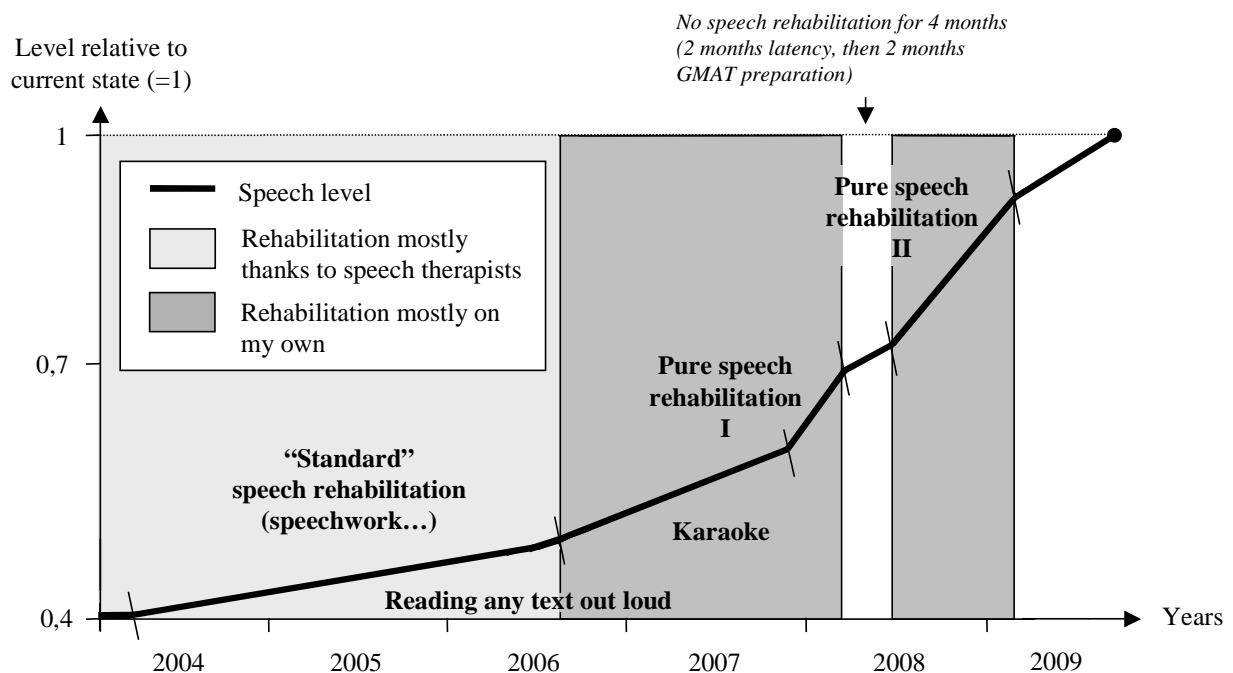
- filled with holes, because I had “unlearned” many speech sounds
- weakly articulated, because I no longer knew many articulations (speech sounds combinations within or between words)
- completely monotonous, because I could not express tones
- of sometimes irregular amplitude (volume and pitch)
- very slow
- “chopped”, because I had to breathe every few words

Four causes explain this state of speech :

1. Damaged tongue
2. Damaged jaws
3. Moderate CVA, resulting in dysarthria
4. Damaged cerebellum

I specify “moderate” for my CVA because I visited, to help him and to motivate him for his rehabilitation, the father of a close friend who had also recently had a CVA. I then realized that my speech problems were much less serious than his. Indeed, I managed to speak although I spoke very badly, but he had to relearn to speak, he had to relearn the voicing of sounds.

Rehabilitation curve



The curve strongly rises only with the handling on my own of rehabilitation, without advice from a speech therapist. This personal handling took the form of “pure speech rehabilitation”.

The rehabilitation curve does not show progressively diminishing returns. On the contrary, returns strongly rise over time, a phenomenon I clearly felt during my rehabilitation.

This profile surprised me, then I found a possible explanation: the increase in speech improvements over time may result from the reinforcement, by each specific exercise, of a general “speech rehabilitation power”.

Additional possible explanations are :

- My speech rehabilitation was autonomous only at approximately its 3/5th. Autonomous handling of rehabilitation was of a much higher intensity than when I could fall back on a speech therapist.
- The initially very intense rehabilitation work became less intense over time, so the “effective rehabilitation/rehabilitation effort” ratio increased.
- I needed as a patient to follow a long rehabilitation “learning curve”, before I could devise very efficient exercises.

My speech goes on markedly improving six months after my speech rehabilitation ended.

This improvement results from the very strong latency effect detailed on page 18. This rehabilitation effect is very welcome but completely unexpected, over such a long period and with such a strength.

General considerations

I try here to present clearly my speech rehabilitation work. This presentation may conceal I rehabilitated speech in “deep fog” and complete uncertainty.

Rehabilitation causes : speech problems of physical and cranium origin

- **Speech problems of physical origin**

The scarred tongue, the slanted palate and the lack of teeth resulted in several speech problems.

- **Speech problems of cranium origin: dysarthria (neurological speech problem) due to the damaged brain, and hurt cerebellum**

Their impact on my speech was much greater than that of physical problems.

I solved them thanks to “pure speech rehabilitation”, during the second phase of which I “trimmed” then “polished” my speech (these terms refer to the parallel presented on page 23 between my rehabilitation from dysarthria and the creation of a necklace).

Conceptualization and practice

Regarding conceptualization, I worked out numerous personal exercises.

Regarding practice, I executed exercises in places perhaps a little unusual for speech rehabilitation, such as in front of the TV or the computer, in a W.C.... or during my daily travel.

Regarding daily travel, I needed during the initial stage of my rehabilitation to flex my tongue. So, I executed tongue flexing exercises whenever I moved : taking the suburban train or the underground, or walking in the street. Since my mouth was closed during these exercises (pressures against the palate, horizontal movements...), nobody around me could notice them.

Duration of my speech rehabilitation

Speech rehabilitation was very slow, because it was very vast. At its term, I did not want to show I had rehabilitated my speech.

In that way, the person I would talk to would focus on my message, not on my speech.

Complete non-representativity of close ones for the evaluation of speech level

Members of my family and friends never referred negatively to my speech.

That they did so is very good, because I preferred they do not highlight my poor speech level. However, **I had to realize these persons are not at all representative for the comprehension of my speech. The goal of its rehabilitation was to live again in society, not to stay in the rehabilitation field.**

These persons told me things such as “You have a 90% level” or “Some people speak worse, such as people who have a lisp”.

Thankfully, the friend of a close friend and a friend told me : “If you work at my company, you will have a seriously handicapped person job.” and “If you talk like this in a job interview, you will be torn to pieces.”.

I sincerely thank these persons for having told me the truth, for having made my speech handicap appear so clearly.

Paramedical rehabilitation means

I had speechwork sessions with 3 speech therapists :

- “Speech therapist I”, a speech therapist in the rehabilitation center
- “Speech therapist II”, a liberal speech therapist who gave me sessions at the home of my parents
- “Speech therapist III”, a Parisian liberal speech therapist

Personal rehabilitation means

Speech rehabilitation is the specific rehabilitation where I invested myself most. I detail hereunder how I treated it so some of its elements may possibly be used by you.

I solved **my** speech rehabilitation case. For **yours**, please ask your speech therapist if any idea presented in this section is worthwhile for your rehabilitation. **She** will indicate whether it is the case.

Speech rehabilitation is very tough. Do not spend time and energy on rehabilitation exercises insufficiently efficient for you.

Improvement in my rehabilitation was made possible by a constant evolution of it. Exercises were at first “generic”, then increasingly “specific”.

Rehabilitation needs

The table on page 9 that summarizes my rehabilitation details 7 rehabilitation needs (→ “rehabilitation focus”). However, 2 needs caused 70% of the volume of my rehabilitation :

- re-learning of certain speech sounds
- re-learning of certain articulations

These needs correspond to numbers 2 and 3 of the table .

Needs n°6 and n°7 resulted from them. Need n°4, the total lack of speech amplitude, was a consequence of the damaged cerebellum. Need n°5, the necessity to re-learn the ability to express tones (joy, surprise...), was also due to the damaged cerebellum. Need n°1, tongue-flexing, was of major importance during the initial 2.5 years of rehabilitation. However, my rehabilitation efforts made this problem decrease then disappear.

Speech rehabilitation structure

1. Period of basic rehabilitation

This period comprises tongue flexing, part of the re-learning of speech sounds and articulations, part of the regaining of control over the amplitude of my speech, and the re-learning of the expression of part of the tones.

It comprised 3 phases :

- *Standard speech rehabilitation I* - 9 months
- *Standard speech rehabilitation II* - 27 months
- *Standard speech rehabilitation III* - 9 months

I personally handled my rehabilitation, but I could never have executed it without the speech therapists in charge of me.

2. Period of fine rehabilitation : “pure speech rehabilitation”, ending with the “trimming” of my speech, and finally its “polishing”

I carried out this second period of rehabilitation mostly on my own, but I executed *Pure speech rehabilitation II* in great part thanks to speech therapists II then III.

It comprised 2 phases :

- *Pure speech rehabilitation I* - 3,5 months
- *Pure speech rehabilitation II* - 6,5 months

Pure speech rehabilitation II was executed in 2 steps :

- First step
- Second step

The second step of *Pure speech rehabilitation II* was itself executed in 2 parts :

- ✓ First part
- ✓ Second part

The table overleaf summarizes my rehabilitation.

Speech rehabilitation summary

Basic rehabilitation

Fine rehabilitation

Rehabilitation phase number and name		1	2	3	4	5	
		STANDARD SPEECH REHABILITATION I	STANDARD SPEECH REHABILITATION II	STANDARD SPEECH REHABILITATION III	PURE SPEECH REHABILITATION I	PURE SPEECH REHABILITATION II	
Living place		Rehabilitation center Months 1-9	Home of my parents Months 10-36	Paris Months 37 - 45	Paris Months 46 - 49	Home of my parents Months 50-55	
Duration (months)		9	27	9	3.5	6.5	
Daily rhythm		10h	3-5h	3-5h	10h	10h / 4 months then 6h40 / 2.5 months	
Rehabilitation focus		1	Tongue flexing	Tongue flexing	Tongue flexing	Tongue flexed	
		2	Re-learning speech sounds	Re-learning speech sounds	Re-learning speech sounds	Re-learning speech sounds	Re-learning speech sounds
		3		Re-learning articulations	Re-learning articulations	Re-learning articulations	Re-learning articulations
		4		Regaining amplitude	Regaining amplitude	Regaining amplitude	Regaining amplitude
		5			Re-learning tones	Re-learning tones	Re-learning tones
		6				Re-learning speech speed	Re-learning speech speed
		7					Adv. re-learning of sp. sounds
Paramedical following		Speech therapists I then II, 2 sessions a week	Speech therapist II, 2 sessions a week	Autonomous work	Autonomous work	First month sp. ther. II, 4 following months sp. ther. III, 1.5 last month autonomous work	
Major rehabilitation consequence		Tongue partially flexed	Re-learning some sp. sounds / articulations	Re-learning tones	Re-learning breath mgt. in speech	Regaining "regular speech"	

2.1. PRINCIPLES

a. Quality-quantity couple

Quality

During rehabilitation years, I was always attentive personal exercises enable a permanent qualitative improvement of my speech :

- First 2 years : essentially tongue flexing, then partial re-learning of speech sounds and articulations.
- Following 1.5 year : essentially partial re-learning of speech sounds and articulations, and partial re-learning of tones.
- Last year : final re-learning of speech sounds and articulations, and re-learning :
 - modulation of speech amplitude, partially re-learned from year 2
 - tones, partially re-learned from year 3
 - breath management in speech
 - fine and very fine speech sounds
 - “ordinary” speech rhythm

I wrote an ever-increasing part of the words then sentences, so they :

- correspond exactly to my rehabilitation case
- be the most efficient possible
- motivate me (I tried to make them rather funny)

At the beginning, I spoke too poorly to pronounce anything other than very simple expressions. For instance, for the re-learning of the “ch” speech sound : “Le monchu va à Chamonix” (*the tourist goes to Chamonix*).

However, before I executed any new rehabilitation exercise, I always asked my speech therapist what she thought about it. I did this because she had followed specialized studies to learn speech, and practiced speech rehabilitation as a professional. As for myself, I thought about my rehabilitation case, had rehabilitation ideas, but did not know their value for the improvement of my speech.

Quantity

Quantity never was an absolute quantity, but was the daily maximum quantity repeatable over a long time period.

It should not be a sort of “record”, completely useless for rehabilitation, and even harmful due to its energy cost.

I multiplied several times the daily duration rehabilitation speech therapists advised. For instance, the first speech therapist advised me to exercise 20 minutes per day, but I exercised 10 hours in years 1 and 5, so 30 times more.

A presentation of my rehabilitation focusing on quantity would be entirely inadequate, for quantity was just the expression of quality. I was the one handling my speech rehabilitation, and speech therapists were specialized consultants to whom I had recourse.

b. Principles and examples of personal exercises

Speechwork exercises

Personal speechwork exercises were in no way substituted for those my speech therapist had given to me. Actually, I would have been stupid to replace the work of a speech therapist who was helping me solve my rehabilitation case.

During the first 3.5 years, each of my speechwork exercises was usually derived from an exercise a speech therapist had given me. It had one of 3 purposes :

1. adapting the exercise as well as possible to my rehabilitation case
2. enhancing it
3. doing other than it

Other rehabilitation exercises

- **Watching movies to enable tongue flexing.**

Reasons for the exercise

The scar across my tongue rigidified it.

So, to flex it was necessary. Flexing exercises were for instance done by applying pressure to my tongue with a little spoon. They were very tedious.

Exercise

To escape boredom that would have made me give up, I watched movies during which I flexed my tongue.

I subscribed to an Internet video club, and for 6 months saw between 2 and 3 movies a day (during the other rehabilitation hours, I did exercises to re-learn speech sounds and articulations).

- **Reading my bedside book out loud before sleep, and reading books, magazines and articles out loud during the rest of the day.**

It made me work articulations.

- **Singing karaoke songs.**

Karaoke songs were **VERY** useful. Indeed, they brought me :

- a strong increase in **speech strength**, because I sang the songs rarely melodiously but invariably at the top of my voice
- a very consequent **articulatory work**, for I had to pronounce all words of the songs
- an increase in **speech speed**, since I had to follow the rhythm of the singer

- **Reading complete theatre plays out loud** (origin : pages of plays given by speech therapist II).

It made me re-learn most articulations and all tones.

I also had more minor rehabilitation ideas, such as the conduct of rehabilitation sessions over the phone. To do so, my speech therapist and I were in 2 different rooms, each with a handset, and we used to speak the internal speech function of the home telephone.

Since the sound spectrum transmitted by a telephone handset is narrower than the one perceived in a face-to-face meeting, I had to concentrate on the clarity of my speech.

c. Making personal exercises fun or interesting

The execution of rehabilitation exercises for hours would have been too boring and tiring if I had spent my time only rehabilitating. As a consequence :

- Watching movies while flexing my tongue enabled me to laugh or to learn. I would never have been able to execute hours of flexing exercises without being absorbed by movies I liked.
- Reading books out loud was essentially reading to laugh or to learn. Reading them out loud was almost a secondary effect.
- Karaoke enabled me to jabber at the top of my voice songs I like, such as songs from early albums of *Placebo*. I also went through all the pop, rock or heavy metal songs I knew the melody of : songs from *Renaud*, *Johnny Halliday*, *Abba*, *Muse*, *AC/DC*... I derived pleasure from singing particularly beautiful songs, such as certain songs from *Jacques Brel*.
- Reading theatre plays out loud made me work articulations while laughing. I laughed because I used almost only comedies. I did this, because reading a play out loud during hours in a row is easy only if it is funny. Regarding comedies, I was sometimes actually looking forward to reading them.

2.2. TASKS

Other than tongue flexing, rehabilitation tasks belong to one of 4 categories :

a. Re-learning certain sounds

This task lasted all my rehabilitation.

I had to re-learn certain speech sounds the CVA had made me “unlearn”. They comprised :

- numerous consonants : the whole of “fricative consonants” (*f, v, s, z, ch, j*) and part of “nasal consonants” (*m, n*)
- some vowels (*i, o* and the nasalized *o, on*)
- certain combinations of sounds (in particular *st* and *gn*)

Operations on my mouth and artificial teeth were the precondition to my re-learning a large part of speech sounds

The state of the mouth plays a very important role in speech, for the following reasons :

- Teeth : the airflow of speech is modulated by teeth, in particular upper teeth.
- Palate : the quality of sounds is partly determined by its form.

For a long time, the state of my mouth did not allow me to emit a large number of speech sounds :

Teeth

I have 17 teeth left. In the upper jaw are artificial teeth, and on the lower jaw is a removable denture which I brush and disinfect twice a day.

I have an overbite, for the initial fracture of my lower jaw did not allow it to be integrally reformed. Therefore, I asked the dental surgeon in charge of me to have an 8-millimeter protrusion made at the front of the denture. Thanks to it, my upper and lower lips join at the same level.

Initially, my jaws were considered too fragile and damaged for artificial teeth or a denture other than a “temporary” plastic denture. However, my plastic denture unexpectedly acted as a “splint” to my lower jaw, which it allowed to consolidate.

Owing to the complexity of my medical case, the two dental surgeons I initially had appointments with for artificial teeth each gave me a negative medical reply.

A third dental surgeon accepted to take charge of me.

However, he placed artificial teeth only in the upper jaw. He had a denture made for the lower jaw, considered too fragile to receive artificial teeth.

He implanted my artificial teeth in May 2007.

Palate :

My mouth presents specificities which artificial teeth and a permanent denture mostly made disappear. However, certain specificities remain, in particular a slightly slanted lower jaw that modifies a little the form of my palate.

I thought this slant would result in irreparable speech problems. However, speech therapist II told me my palate made certain speech sounds only temporarily poor. A phenomenon of adaptation would manifest itself, and I would thereafter be able to pronounce these speech sounds well.

Adaptation took time, but was complete.

Adaptation played a very important role in my speech rehabilitation.

I had reasoned using constant parameters, but my body in rehabilitation did not have a constant field.

Adaptation is an additional explanation for the rising slope of my speech rehabilitation curve.

I had for jaws and teeth 3 operations, approximately 50 appointments with a physician at the La Pitié-Salpêtrière hospital, and over 20 appointments with the dental surgeon in charge of me.

b. Re-learning certain articulations

This task lasted all my rehabilitation.

Owing to my articulatory problems, for a long time I was under the impression my speech was surrounded by a “halo” that did not allow it to be clearly perceived. This “halo” was because I no longer knew the pronunciation of many articulations.

I could not pronounce without having to repeat myself, several times at the beginning, words of more than three syllables, such as “*aspirateur*” (vacuum cleaner) or “*macro-économique*” (macroeconomic).

I re-learned most articulations and speech sounds thanks to :

- expression lists I wrote (for speech sounds only)
- standard speechwork exercises
- reading all my books and magazines out loud
- karaoke songs
- “pure speech rehabilitation”

c. Quickening speech

This task lasted until the end of *Pure speech rehabilitation I*.

That I be able to hold a conversation required that I quicken my speech while keeping it clear (I would slow a little the way I spoke during *Pure speech rehabilitation II* by separating words with spaces).

Two means enabled me to speak more quickly:

- **karaoke songs**
- **“pure speech rehabilitation”**

Reason for “pure speech rehabilitation”

In November 2006 balance rehabilitation ended.

During Fall 2007, re-learning to write and intellectual rehabilitation were well under way. However, my speech was still very unsatisfactory.

Therefore, I decided to invest myself completely in speech rehabilitation, and to conceive a rehabilitation mode specifically suited to my rehabilitation case.

I call this rehabilitation mode “pure speech rehabilitation” and detail it on the next page. Its initial phase, *Pure speech rehabilitation I*, lasted 3.5 months, from November 22nd 2007 to March 8th 2008.

I thought that this “pure speech rehabilitation” phase would allow me to finish to rehabilitate, but it was not the case. Therefore, from August 2008 I carried out a *Pure speech rehabilitation II* phase.

Living conditions

“Pure speech rehabilitation” forced me to adopt a stringent rehabilitation regimen, indispensable in my rehabilitation case.

During *Pure speech rehabilitation I*, time pressure meant I could neither wash myself more often than once every two days, nor do cooking. Because of this, I essentially ate a liquid yogurt in the morning, cheese for lunch and dehydrated soup in the evening. I rested from

rehabilitation on Sunday and on Wednesday, days during which I went jogging to relax. I did not go out of my small flat from Sunday evening to Tuesday evening, and from Wednesday evening to Saturday evening.

I went to sleep at 21h30 and woke up at 5h00. I forced myself to go to bed early every day, in order to :

- rest
- enable the latency effects detailed below to occur

Rehabilitation work

During this phase, I spent most of the time reading theatre plays out loud (reading periods were separated by exercise periods for the re-learning of speech sounds).

At its very beginning, I went to a bookstore specialized in theater where I bought approximately 30 plays. While reading them out, I highlighted the words, expressions and sentences that were the most difficult to articulate. Then, I would repeat them 20 to 200 times.

Pure speech rehabilitation I had a major effect I did not expect : it enabled me to speak much less “choppily”, therefore more quickly.

Before it, I had to breathe every few words due to my misuse of breath. After it, speech became much less “choppy”, because I had forced myself to pronounce longer word chains, and therefore had much improved articulation speed.

“Pure speech rehabilitation”

- Principle : To spot my speech problems and to try to solve them all.
To do almost only speech rehabilitation, to think almost only about it.
- Work quantity : 206 rehabilitation days over a little more than a year.
Daily rehabilitation work of 10h for 85% of this duration, then of 6.5h for the remaining 15%.
- Elements to be attentive to : **Thickening out of the mouth, and latent rehabilitatory improvement.**

Thickening out of the mouth

As soon as I began, I noticed a “thickening out” of my mouth that made my speech less clear after approximately 3 hours of rehabilitation.

A moderately decreasing return of my rehabilitation efforts was for me not a real problem. Indeed, I was not looking for an ideal maximum, but for the maximal rehabilitatory effect given my medical case. Thus, for 10 hours of work, an equivalent of 8 to 9 hours of rehabilitation would be acceptable.

However, to prevent the thickening out phenomenon from occurring too strongly, I divided the daily quantity of exercises in 3 sequences of 3 hours 20 minutes, separated by 2 rest periods of 2 hours.

Rehabilitatory improvement following latency

Most improvements only happened after a latency period. The most efficient rehabilitation required a rest after work of an extreme minimum of a good night, of a minimum of one day and of an ideal of 2 days.

In consequence, I separated by 1 or 2 days of rest rehabilitation groups of :

- 2 or 3 consecutive days, during Pure speech rehabilitation I
- 3 to 5 consecutive days, during Pure speech rehabilitation II

Clear speech improvements keep occurring **since** my rehabilitation ended.

While speechwork therapist II reads the part of this book relative to speech rehabilitation, I speak almost well, whereas at the end of rehabilitation I spoke only correctly.

I do not know how to medically explain this continued improvement, but it happened until I write these lines and nothing indicates it will stop.

d. Fine re-learning of sounds, “trimming” then “polishing” of my speech

Pure speech rehabilitation II made this task possible.

My friends were beginning to ask me “Sorry?”. This question was a very positive sign for me : I had progressed enough for them not to feel embarrassed to ask it. However, it made clear further speech improvements were necessary.

On August 4th, 2008, I went to an examination center to take the GMAT (the GMAT is an international examination necessary to apply for an MBA – Master in Business Administration –, which consists in managerial studies after a few years of professional life). The person receiving candidates did not understand my name. This lack of comprehension troubled me enormously.

Therefore, I decided to follow a new phase of “pure speech rehabilitation”, which I wanted final. From August 7th 2008 to February 19th 2009, I carried out a *Pure speech rehabilitation II* phase. During this phase, I very markedly increased the reflection on my rehabilitation case.

Living conditions

I lived at the home of my parents. Accordingly, I did not have to care about numerous details of living conditions, and could concentrate completely on rehabilitation. The intensity of *Pure speech rehabilitation II* was comparable to the preparation of a “concours” (entry examination to a “grande école”, a French specialized school for higher education). However, I was not trying to get into a school, but into my life. So, my focalization on the goal was extreme.

Rehabilitation framework

Due to my improved speech, I had to be more qualitative during this phase than before. So, I began by contacting in August 2008 my speech therapist II to have the advice of a rehabilitation professional. He told me he did not really see improvements I could do. He had difficulties to understand me at the beginning of sessions 2.5 years earlier, and he thought I had much improved. Then, he made a decision full of professionalism and of humility : he told me another speech therapist would evaluate my rehabilitation case differently from him, and he gave me the references of speech therapist III. From September 2008, I worked with him. **I WANTED** to speak better, so I was in a state of high receptivity to his messages. Therefore, I learned from sessions with him much more than I had learned until then from speechwork sessions.

Rehabilitation guidelines

They were :

- To perceive my speech as a third party, so as not to guess a word through my partial comprehension of it.
- To pronounce a whole sentence in a continuous manner, to regain speech fluidity.
- To “dynamize” speech, to go from the rather flat oral mode of reading out loud to the more spontaneous oral mode of talking.

2.3. PURE SPEECH REHABILITATION II

First step - 4 months -August to November 2008.

Its aim was to re-learn all speech sounds and articulations.
So, I read out :

- *Poems, upon advice from my speech therapist II, in order to regain a fine mastery of speech sounds and articulations.*

The short length of a poem made me be attentive to each speech sound and articulation. Therefore, while reading it, rehabilitation intensity was very high. Until *Pure speech rehabilitation II*, I spoke too poorly to be able to use poems to rehabilitate. Henceforth, I spoke well enough.

At first, I aimed at pronouncing correctly all sounds and articulations.
Then, I aimed at refining their pronunciation.

This task enabled me to consequently improve the pronunciation of most speech sounds and articulations.

- *Tongue-twisters and sentences I wrote, in order to re-learn the rare speech sounds still missing.*

Missing speech sounds were principally “j” and “ch”.

I re-learned them thanks to the pronunciation, 20 to 200 times, of tongue-twisters and sentences I had written.

An example of the latter is : « *La chatte chafouine en chaussettes chamarrées chaloupe lachivement pour chéduire le chihuahua » (The foxy cat in richly ornamented socks waddles to seduce the chihuahua .)*

I noticed many sounds of these sentences did not necessitate rehabilitation effort. Therefore, I shortened most words, so as to do more speech rehabilitation in the same time.

Hence, the previous sentence became : « *La cha- chaf- en chau- cha- chal-lach- pour ché- le chi-».*

This task enabled me to completely re-learn speech sounds.

- *Various texts, upon which I forced myself to control the modulation of my speech.*

The coordination trouble regarding the amplitude of my speech had markedly decreased, but still affected me. It resulted in a speech usually too “flat”, but sometimes too strong or too shrill.

So, I forced myself to read texts out loud with a finely modulated but even voice.

This task enabled me to achieve to control the modulation of my speech.

Second step - 2.5 months - December 2008 to mid-February 2009

My speech was very irregular, marked by certain speech sounds and articulations I had re-learned but sometimes insisted on too little or too much.

The first step of *Pure speech rehabilitation II* had allowed me to relearn all speech sounds and almost all articulations. This second step aimed at automating speech and making it finer.

a. First part

It lasted 7 weeks.

Its goal was to “trim” my speech.

So, I read out :

- *Homophone verses, to refine speech sounds.*

I perceived that my speech problems no longer had to do with missing speech sounds, but with my insufficient fine mastery of them.

I pronounced similarly every given speech sound. Yet, a speech sound is not pronounced exactly the same according to the letters that surround it.

I sought an appropriate rehabilitation means to improve my pronunciation of speech sounds, and found holonyms, French homophone verses. These verses are made of 2 halves, each composed with the same homophone syllables linked differently.

Examples : “*Dans cet antre, lassés de jeûner au palais, dansaient, entrelacés, 2 généraux pas laids*” (In this den, bored fasting at the palace, danced intertwined 2 not ugly generals), or : “*À Lesbos, à Tyr, l'Évangile est appris; ah, laisse, beau satyre, l'Ève en gilet t'a pris*” (In Lesbos, in Tyr, the Gospel is learnt; ah, leave aside, handsome satyr, the Eve in a cardigan kidnapped you).

This task enabled me to considerably refine speech sounds.

- *Sentences difficult to comprehend phonetically, to refine articulations.*

I searched on the Internet a way to refine my articulatory ability, and found the online “difficult sentences” of a Belgian spelling club.

These sentences were termed difficult, because they comprised rare words which very often I did not know.

That I did not know them was perfect for me, for I could not guess them from only part of their speech sounds. So, I had to pronounce them paying attention not to their meaning, but to their **phonetics**.

I read approximately 100 sentences out loud 20 times, and recorded each sentence with a small recorder. Then, I asked my Dad to listen to the recording and to tell me his phonetic understanding of the sentences.

To have to make sentences comprehensible by a third party resulted for me in a very high concentration on the pronunciation of the articulations of the sentences.

This task enabled me to considerably refine articulations.

b. Second part

It lasted 3 weeks.

My speech was still “coarse”; the goal of this part was to “polish” it.

This advanced rehabilitation should make my speech “regular” again.

I no longer had problems with speech sounds or articulations, or with speech sounds pronounced with not enough strength or too strongly because I had not yet automated their pronunciation.

However, my speech was not “regular”, and I wanted a rehabilitation task that would make it so.

Therefore, I read speeches out loud, paying attention that my speech be particularly clear : separated words, varied tone, even rhythm...

These speeches comprised for instance :

- The speech held at the Panthéon (the French national repository for great human beings) for the transfer of the ashes of Jean Moulin (the head of French Resistance during WWII).
- The very famous speech against racism of Martin Luther King, “I have a dream”.

This task enabled me to considerably refine breath use, and to render my speech “regular”.

Pure speech rehabilitation II ended on February 19th, 2009.

This date marks the end of my speech rehabilitation.

THIS DATE MARKS THE END OF ALL MY REHABILITATION.

2.4. PARALLEL BETWEEN MY REHABILITATION FROM DYS- ARTHRIA AND THE CREATION OF A NECKLACE

After the end of my rehabilitation, I depicted to myself the speech rehabilitation work I had done as similar to the work of a craftsman who decides to create a necklace without external supplies. This necklace is made of several rows of multicolored beads, and its motives are separated by little silver cylinders :

- As the craftsman first conceives the necklace, my rehabilitation first entailed I determine how to pronounce many speech sounds and articulations.
- As the craftsman obtains a string from several spools and makes rows with it to form the thread, I “shortened” my speech, controlled it, and re-learned tones.
- As the craftsman devises a mold for each pearl, pours molten glass to make it then trims it, I followed several rehabilitation stages to get clear speech sounds, words then sentences.
- As the craftsman separates beads by little silver cylinders to make patterns, I regained the controlled interstices of breath to make comprehensible the words of my sentences.
- As the craftsman polishes the necklace to make it shine and sell it to a client, I rendered my speech “regular” to be able to speak with persons I am not close to.

This parallel is presented on the next page.

The time length of my speech rehabilitation is not at all representative of the length of speech rehabilitation from dysarthria.

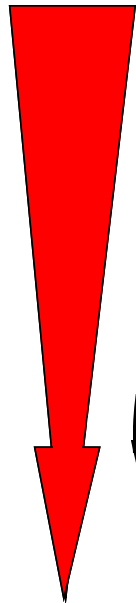
If the following elements were subtracted, my speech rehabilitation would have been greatly shortened :

- Tongue scarred - 6 months less.
- Damaged cerebellum - 7 months less.
- Multiplicity of specific rehabilitations - 8 months less.
- Missing teeth - 8 months less.
- Practice from the onset of “pure speech rehabilitation” - 12 months less.

These elements subtracted, my speech rehabilitation of 55 months would have been shortened by 41 months. It would then have lasted only 1 year 2 month, or less than 2 years if I apply Emma’s cautious method for the computation of rehabilitation time.

Parallel between my rehabilitation from dysarthria and the creation of a necklace with several rows of multicolored glass beads forming patterns separated by small cylinders

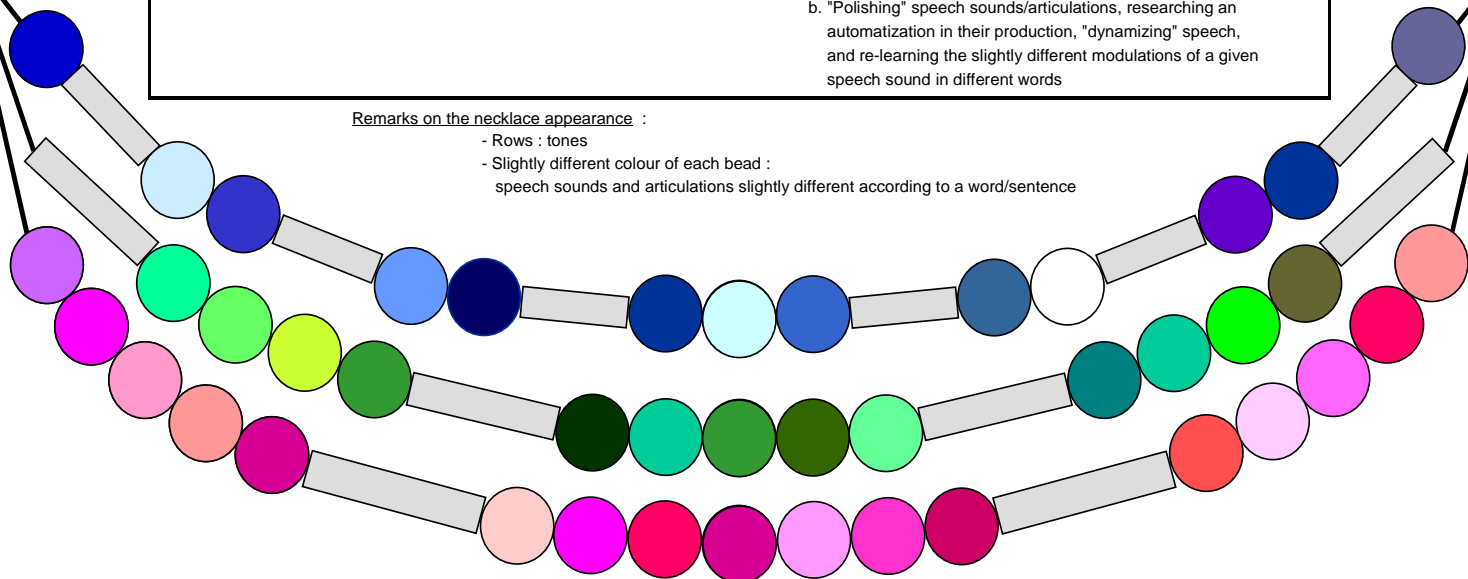
Constant and **INCREASING** speech rehab improvement



Crafting the necklace	→	Rehabilitating speech
Designing the necklace a. Determining the color of each bead b. Drafting, then drawing precisely, the beads	→	Elaborating speech sounds a. Defining the exact auditory sensation of certain speech sounds b. Devising the pronunciation mode of the speech sounds and articulations to re-learn
Creating the pearls of the necklace a. Fabricating molds b. Casting beads	→	Determining rehabilitation means, then re-learning thanks to these means speech sounds and articulations a. Searching appropriate rehabilitation exercises b. Executing these exercises
Preparing the beads, then composing patterns a. Trimming, then polishing roughly, the beads b. Dividing beads in the necklace : - Composition of different rows - Composition of different patterns	→	Assembling speech sounds in words a. Pronouncing ever more finely speech sounds and articulations b. Distributing speech sounds in speech : - Re-learning tones - Looking for exactness in the pronunciation of any speech sound, so a third party may comprehend each word
Separating the bead patterns to enhance them Positioning little cylinders between the pearls	→	Arranging words in sentences "Unchopping" speech
Polishing the necklace	→	Regaining "REGULAR" SPEECH a. Increasing speech speed b. "Polishing" speech sounds/articulations, researching an automatization in their production, "dynamizing" speech, and re-learning the slightly different modulations of a given speech sound in different words

Remarks on the necklace appearance :

- Rows : tones
- Slightly different colour of each bead :
speech sounds and articulations slightly different according to a word/sentence



Final situation

My speech is almost good.

It does not show I rehabilitated it. It is adequate for all life situations.

However, if I “polished” the “necklace of my speech”, I did not manage to make it “sparkle”, so very small specificities remain. In particular, I do not speak in English as well as in French, because I did not re-learn speech sounds and articulations specific to English.

As a result, after a few sentences on my part, the person I am talking to may sometimes realize my speech is slightly peculiar. However, it does in no way hinder her comprehension, and I no longer have to relentlessly answer questions such as “Sorry ?”.

In addition, my speech therapist II made a very seductive parallel between my speech rehabilitation and the driving of a car. He told me : “[I was] in the garage, and will henceforth be on the road. Therefore, [I] will speak better” thanks to my speech practice in life after rehabilitation.