



Unité Logopédie de la Voix



Our lives are dedicated to yours



In collaboration



Efficiency of the Astudillo method in voice harmonization

Morsomme, D; Gillot, A; Jaber, B

VOICE HARMONIZATION

A large, thin orange circle containing the word "Acoustic".

Acoustic

A large, thin blue circle containing the word "Aerodynamic".

Aerodynamic

A large, thin green circle containing the word "Prosodic".

Prosodic

Södersten et al. (2019); Hardy et al., (2016); Leung et al. (2018).

Physiologics

- Vocal hygiene [Morsomme & Remacle, 2016; Davies et al, 2015]
- Modifying Vocal Motor Behavior [Andrews, 2006]
- Increasing *fo* (straw phonation) [Gelfer et al, 2019 in Adler]
- Resonant enhancement [Hardy et al, 2018]
- Articulatory precision, vowel lengthening [Hargus & Quené, 2014]
- Increase in pauses [Oates, 2019]
- Variations in intonational contours [Hancock & Helenius, 2012]
 - *With emotional situations*
- Adjusting non-verbal behaviours, lexicon work [Kim, 2020]
- Working on postures and facial expressions [Dahl & Mahler, 2019]

Symptomatology

- Working on the most uncomfortable VMB
- Pitch
- Include biofeedback [Kawitzky & McAllister, 2020; Morsomme & Remacle, 2021]

One Method

- M. Astudillo, 2019 - 10 sessions
 - Melodic and rhythmic therapy [Van Eeckhout et al, 1995]
 - Verbo-Tonal [Guberina, 1964]
 - Proprioceptive and elastic method [Borràgan, 2018]

Astudillo Method



Ingredients

- ▶ Proprioception
- ▶ Exaggeration
- ▶ Imitation
- ▶ > vowel core
- ▶ Drill

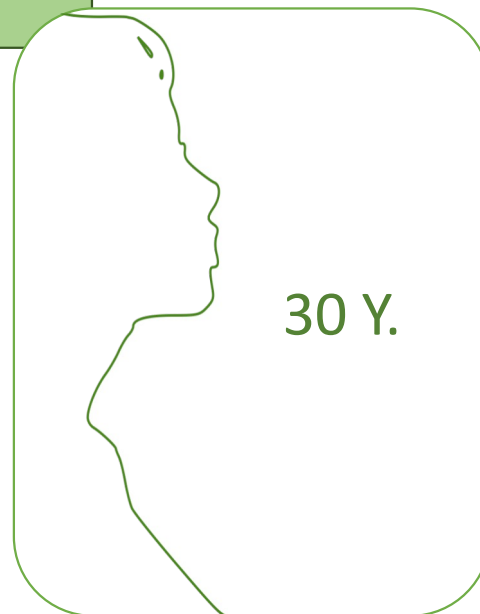
- Melodic and rhythmic therapy
(Van Eeckhout et al, 1995)
- Verbo-Tonal (Guberina, 1964)
- Proprioceptive and elastic method
(Borràgan, 2018)



Results and audio testimonies



Participant



Material

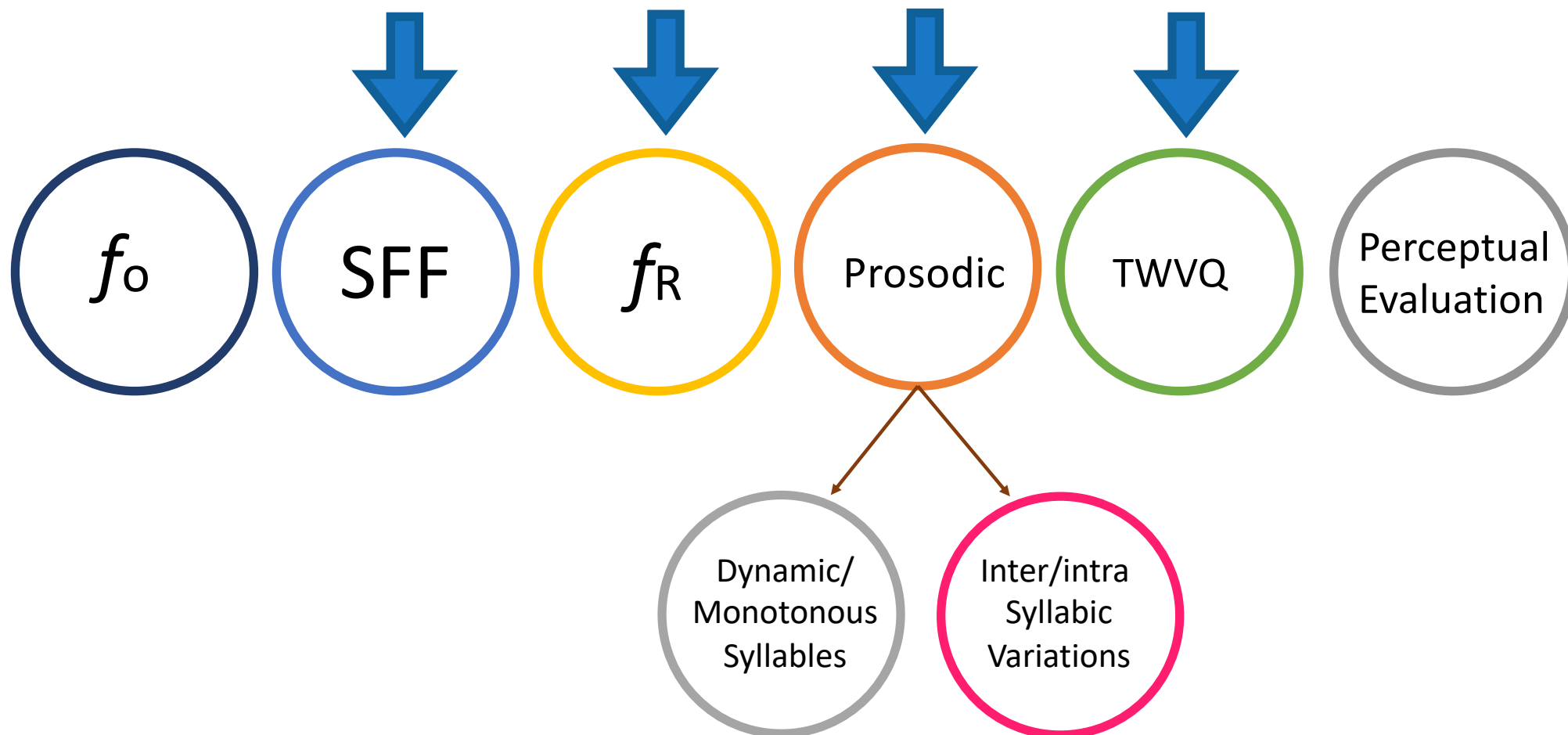
- Praat software [6.1.12]
[Boersma & Weenink, 2017]
- Prosogram software [3.0]
[Mertens, 2004]
- AKG C 544 L
unidirectional condenser
headset

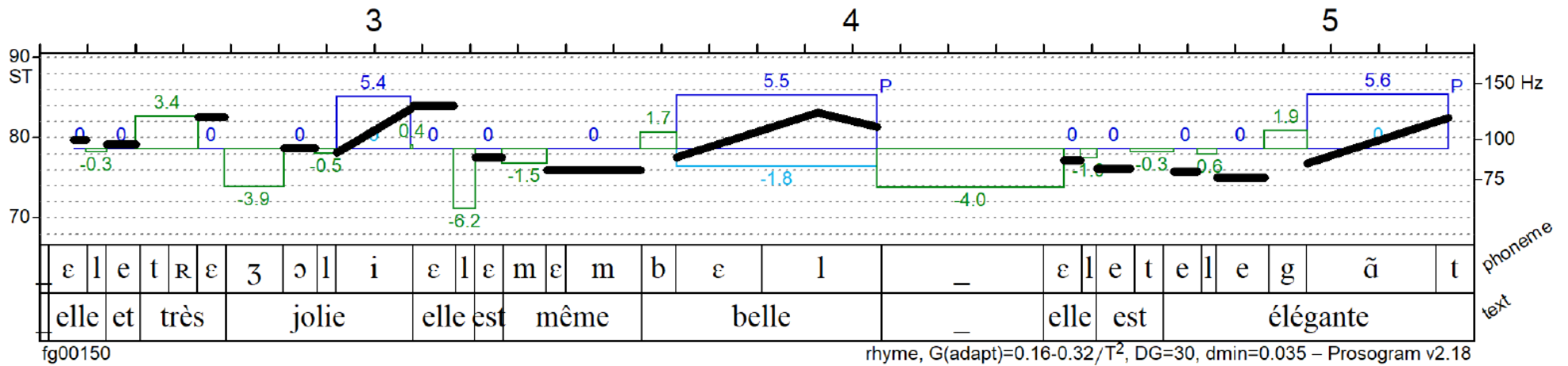
[a]

Dialogue
Delattre (1966)

Reading
Harmegnies &
Landeracy (1988)

**Spont.
Speech**

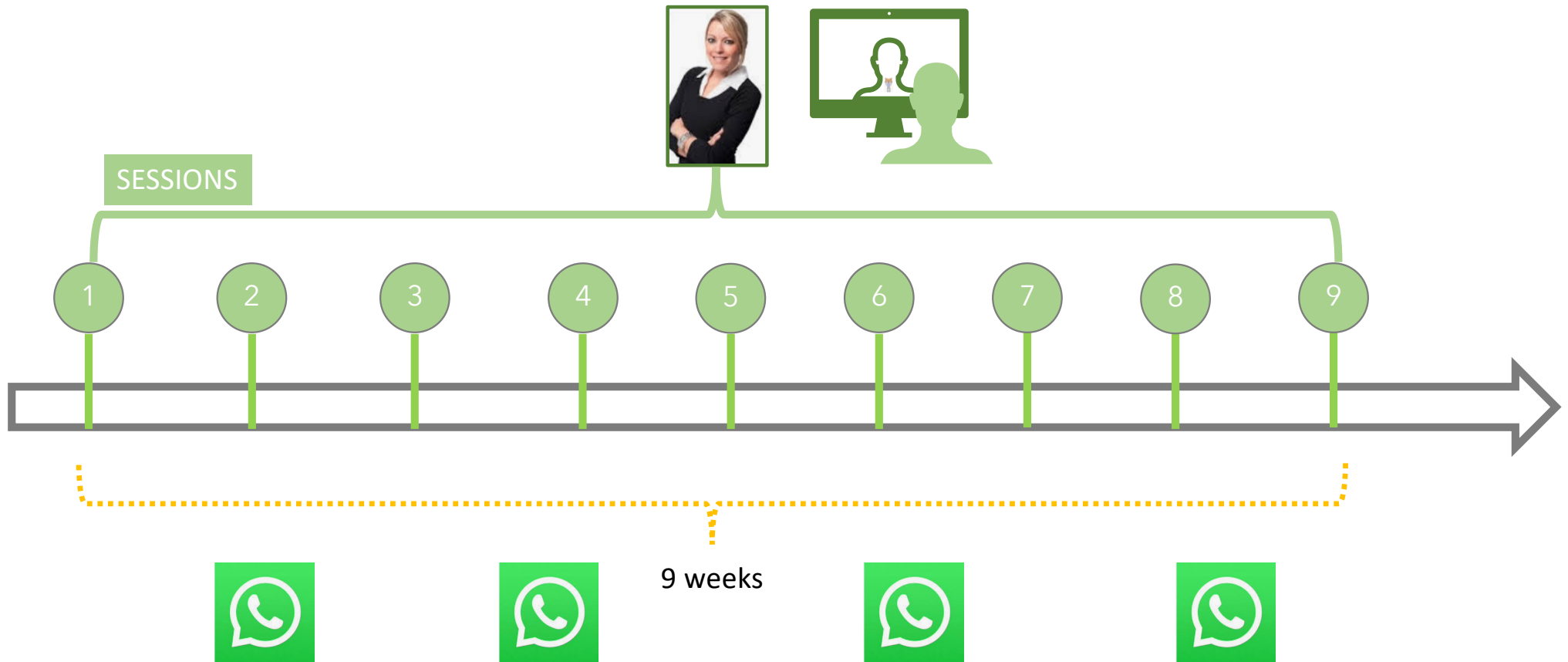




(Prosogram v2.17^e – Profil prosodique © Piet Mertens)

INTRODUCTION

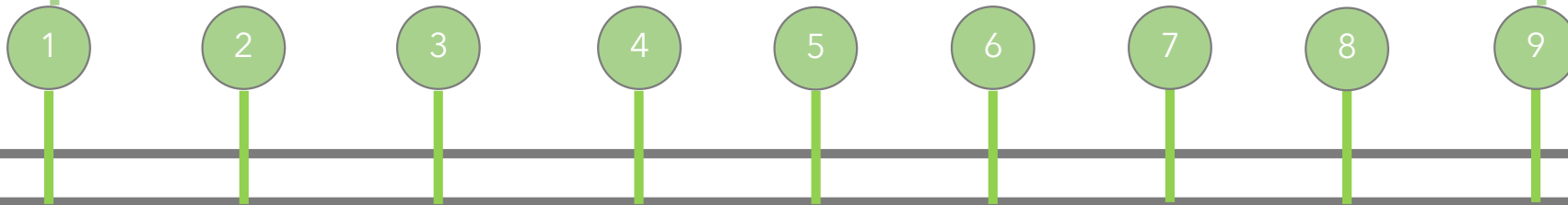
PROCEDURE



INTRODUCTION

PROCEDURE

SESSIONS



Vocal profile

Vocal profile

INTRODUCTION

PROCEDURE

SESSIONS



Prosodic profile

Prosodic profile

Prosodic profile

Prosodic profile

Vocal profile

Vocal profile

- **Acoustic measures**

1. ↗ f_0 median on connected speech
2. ↗ f_{R1}, f_{R2}, f_{R3}

- **Prosodic profiles**

3. ↗ % of dynamic and/or monotonous syllables
4. ↗ total trajectory of intra- and inter-syllabic variations (in Semi Tones per second).

- **TWVQ**

INTRODUCTION

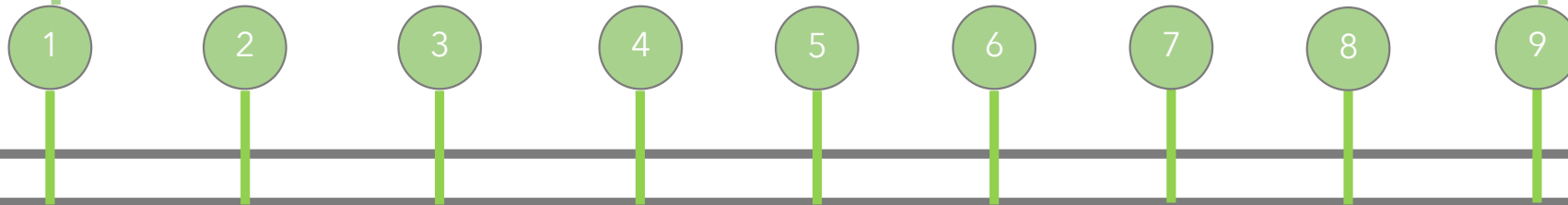
METHOD

HYPOTHESIS

RESULTS



SESSIONS



Vocal profile

SFF: 158 Hz

f_{R3} : 2691 Hz

TWVQ: 69/120

+ 7 to 8 ST

+ 1.6 ST

- 30 points

Vocal profile

SFF: 242 Hz

f_{R3} : 2947 Hz

TWVQ: 39/120

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SESSIONS



Prosodic profile

Prosodic profile

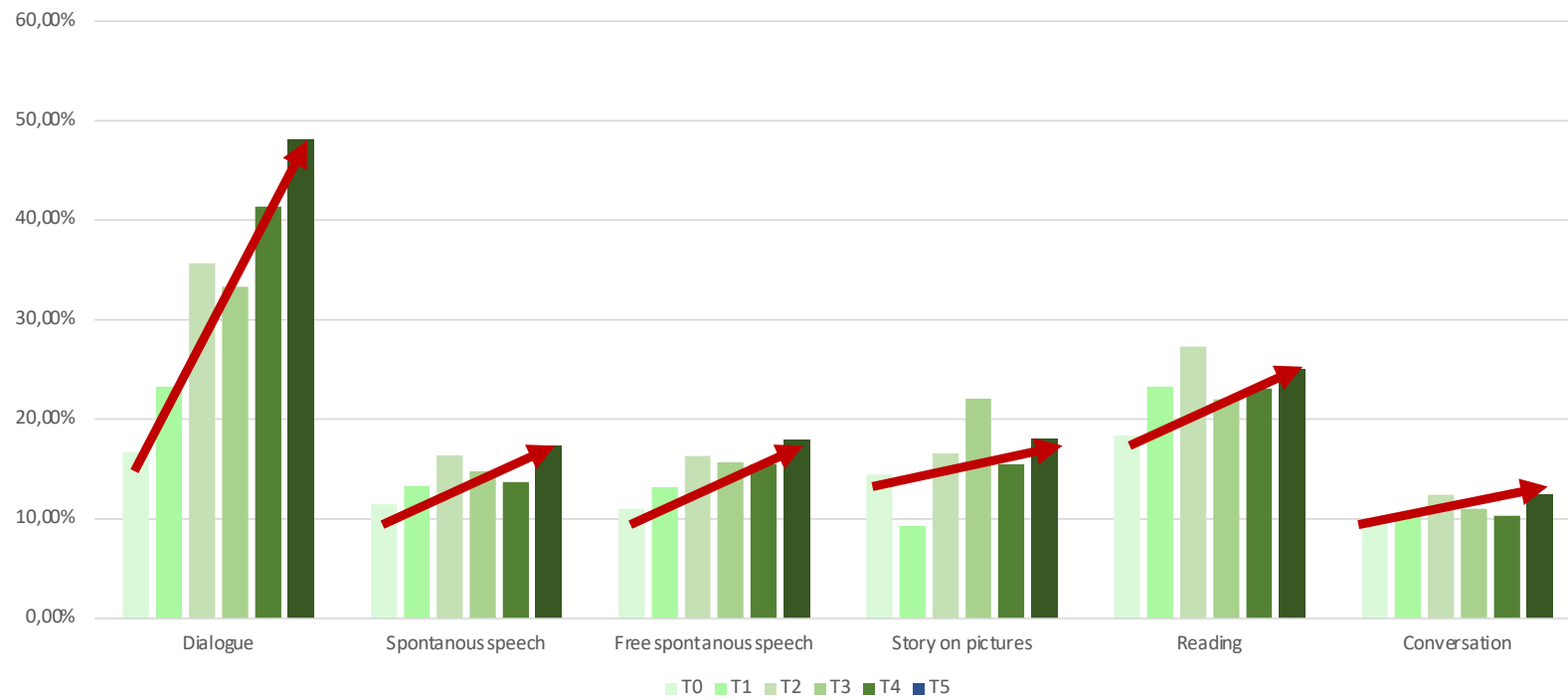
Prosodic profile

Prosodic profile

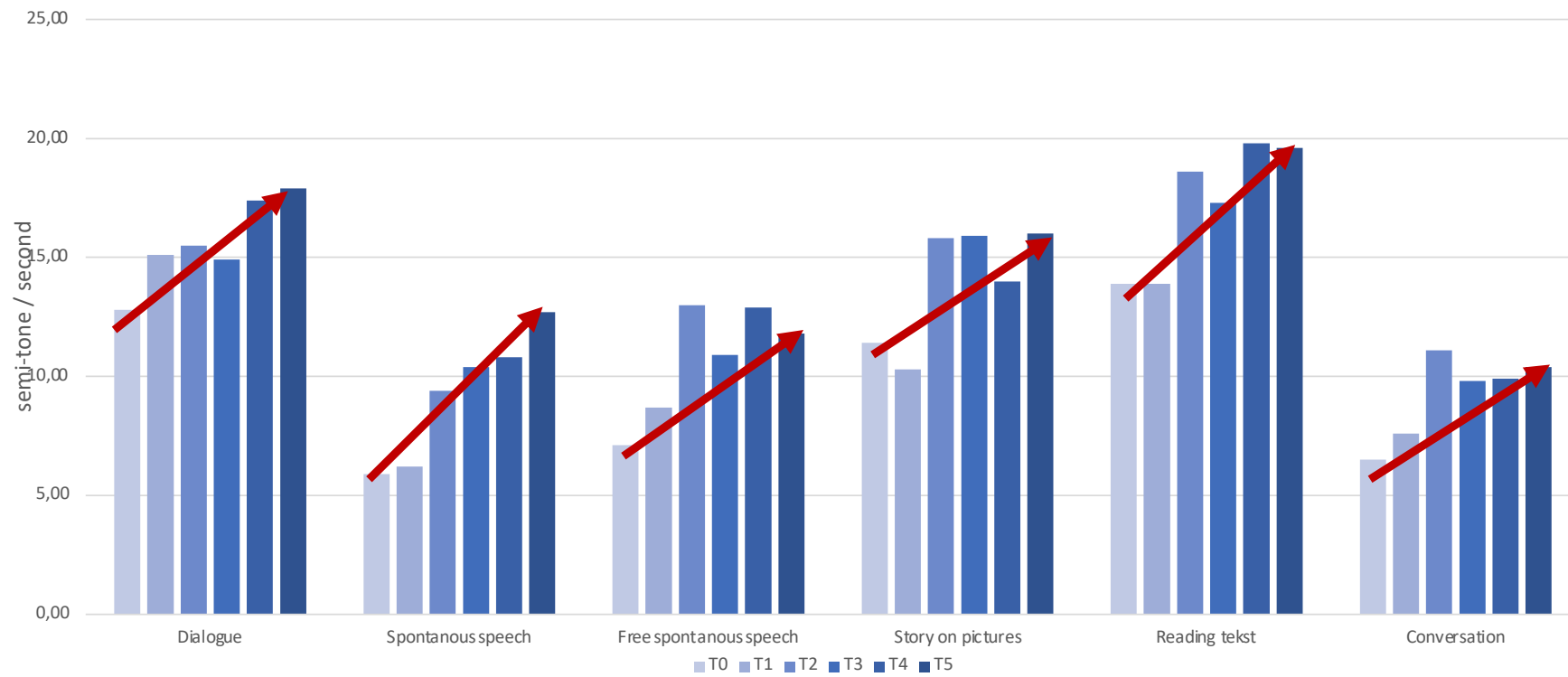
Vocal profile

Vocal profile

Dynamic and/or monotonous syllables in %
Intra- and inter-syllabic variations in ST/sec

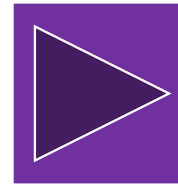


Percentage of dynamic and/or monotonous syllables ($p=0.03$)

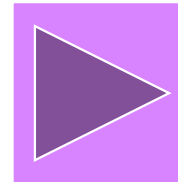


Intra and inter-syllabic variations trajectory ($p=0.03$)

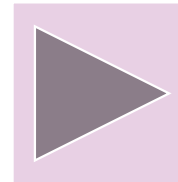
What we learn



1st case study on Astudillo
Method Effectiveness



Tasks related to the method's
ingredients



Content of the
sessions closed to the
participant's QOL

