Assessing, teaching and researching second language fluency

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L2 fluency workshop

1. How to assess fluency?
   - Perceived fluency
   - Utterance fluency

2. How to improve fluency?
   - Skill acquisition perspectives (PPP)
   - Interactionist perspectives (TBLT)

Based on my teaching/research experience and dataset…

2012-2015 Tokyo, Japan

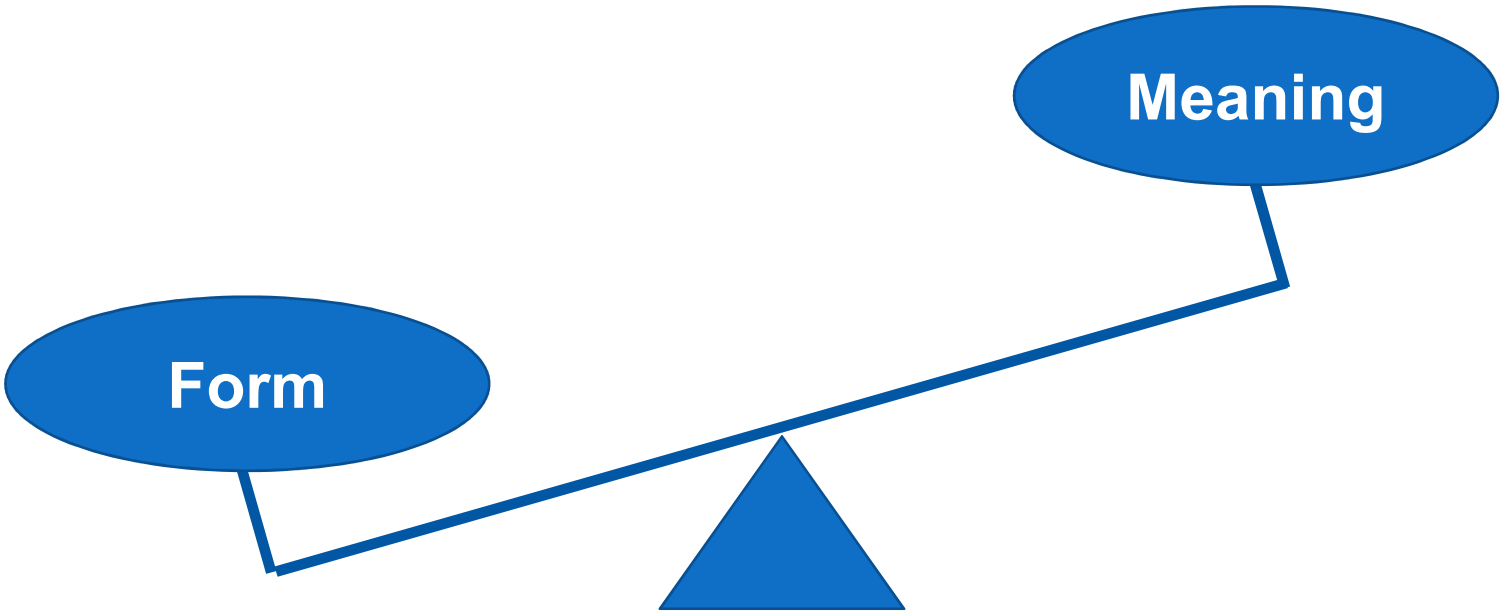
Assistant Professor at Waseda University

My anecdotal story:

I was in charge of the English curriculum for 1000+ "Freshman" students:

- Highly motivated (for study and work-abroad)
- Background: 6 years of EFL education (without enough conversational opportunities) from Grade 7
- Taking several hours of English lessons per week
- Few opportunities to use L2 English outside of classrooms

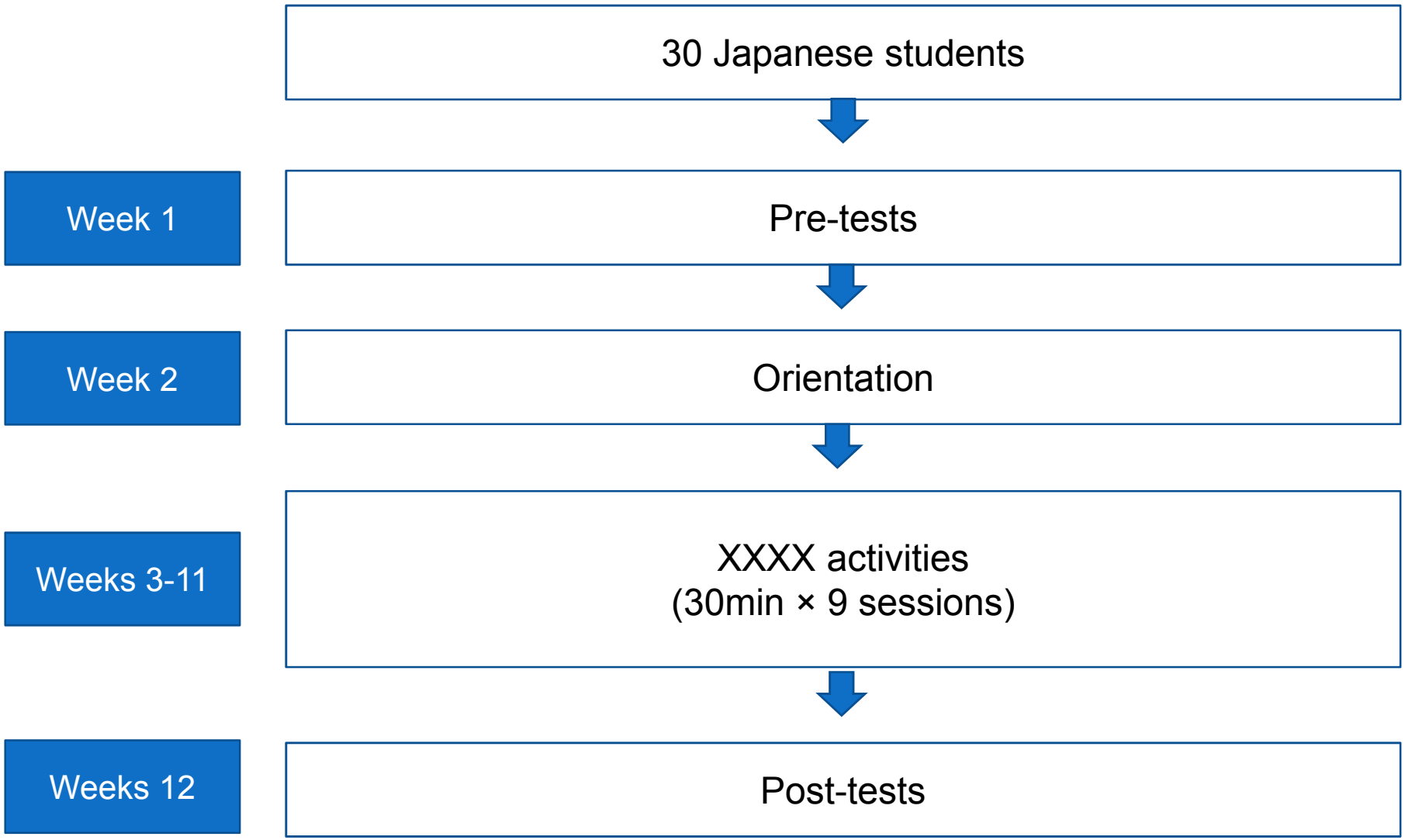
Goal: Enhancing L2 comprehensibility!



→ Too much focus on form!

I invited some of these students to participate in a weekly L2 learning project (30min × 10 weeks)

Kazuya's L2 speaking project



Some positive results:

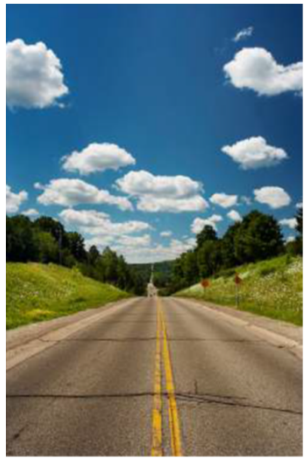
Pre-test

Comprehensibility (401)

(0 = difficult to understand,
1000 = easy to understand)

Post-test

Comprehensibility (677)



Some positive results:

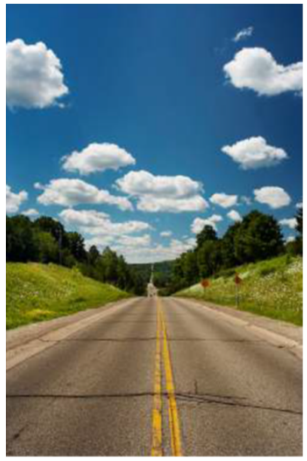
Pre-test

Comprehensibility (102)

(0 = difficult to understand,
1000 = easy to understand)

Post-test

Comprehensibility (388)



Resulting in several publications...

Saito, K., & Akiyama, Y. (2017). Video-based interaction, negotiation for comprehensibility, and second language speech learning: A longitudinal study. *Language Learning, 67,* 43-74.

Saito, K., & Akiyama, Y. (in press). Effects of video-based interaction on the development of second language listening comprehension ability: A longitudinal study. *TESOL Quarterly*.

Akiyama, Y., & Saito, K. (2016). Development of comprehensibility and its linguistic correlates: A longitudinal study of video-mediated telecollaboration. *Modern Language Journal, 100*, 585-609.

Question 1

- **How did the students' comprehensibility improve (*better pronunciation, vocab, grammar*)?**

Question 2

- **What kinds of activities did Kazuya do with his students?**

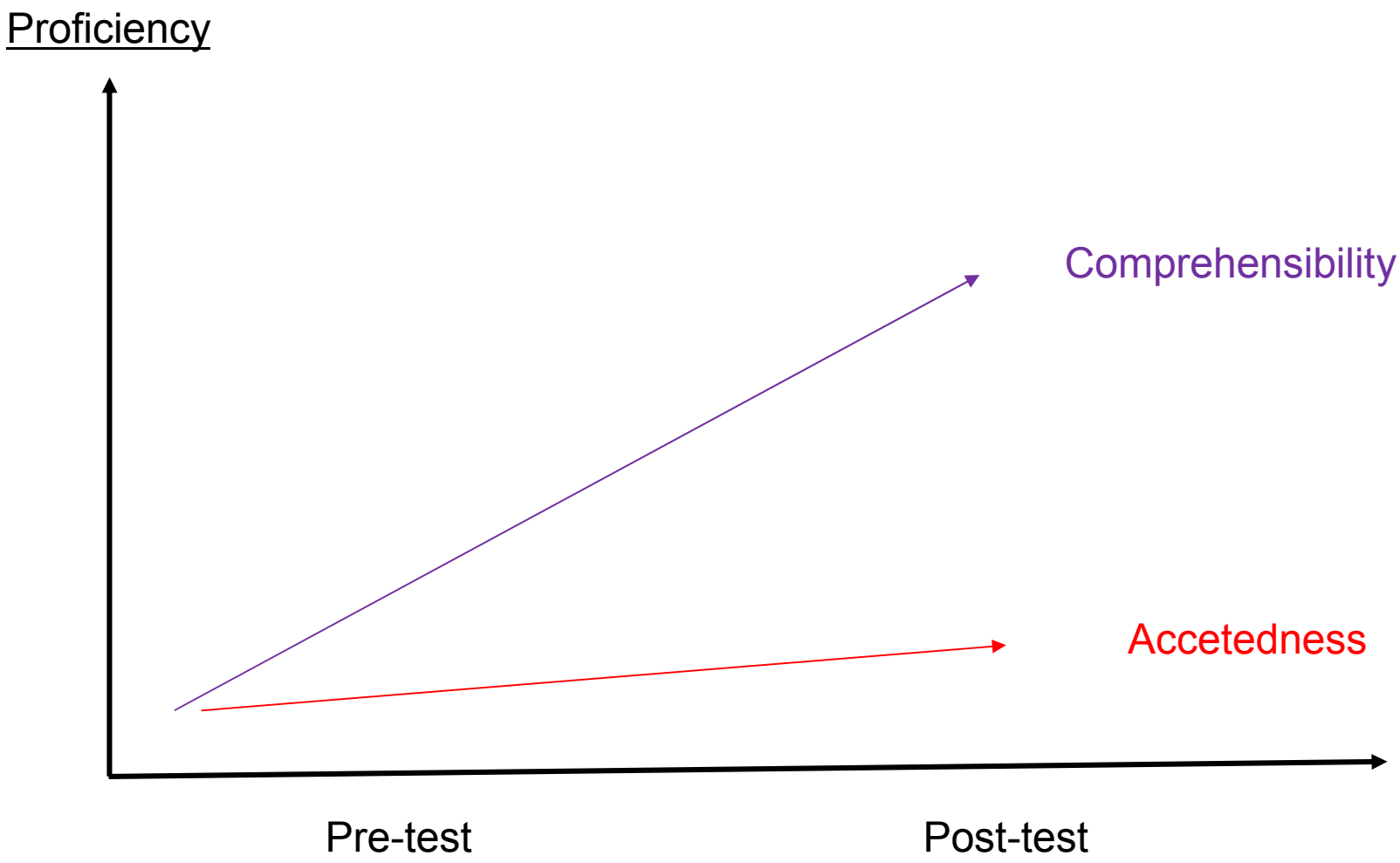
Question 1

How did their comprehensibility improve? Did any specific aspects of their speech (e.g., pronunciation, vocab, grammar) become better?

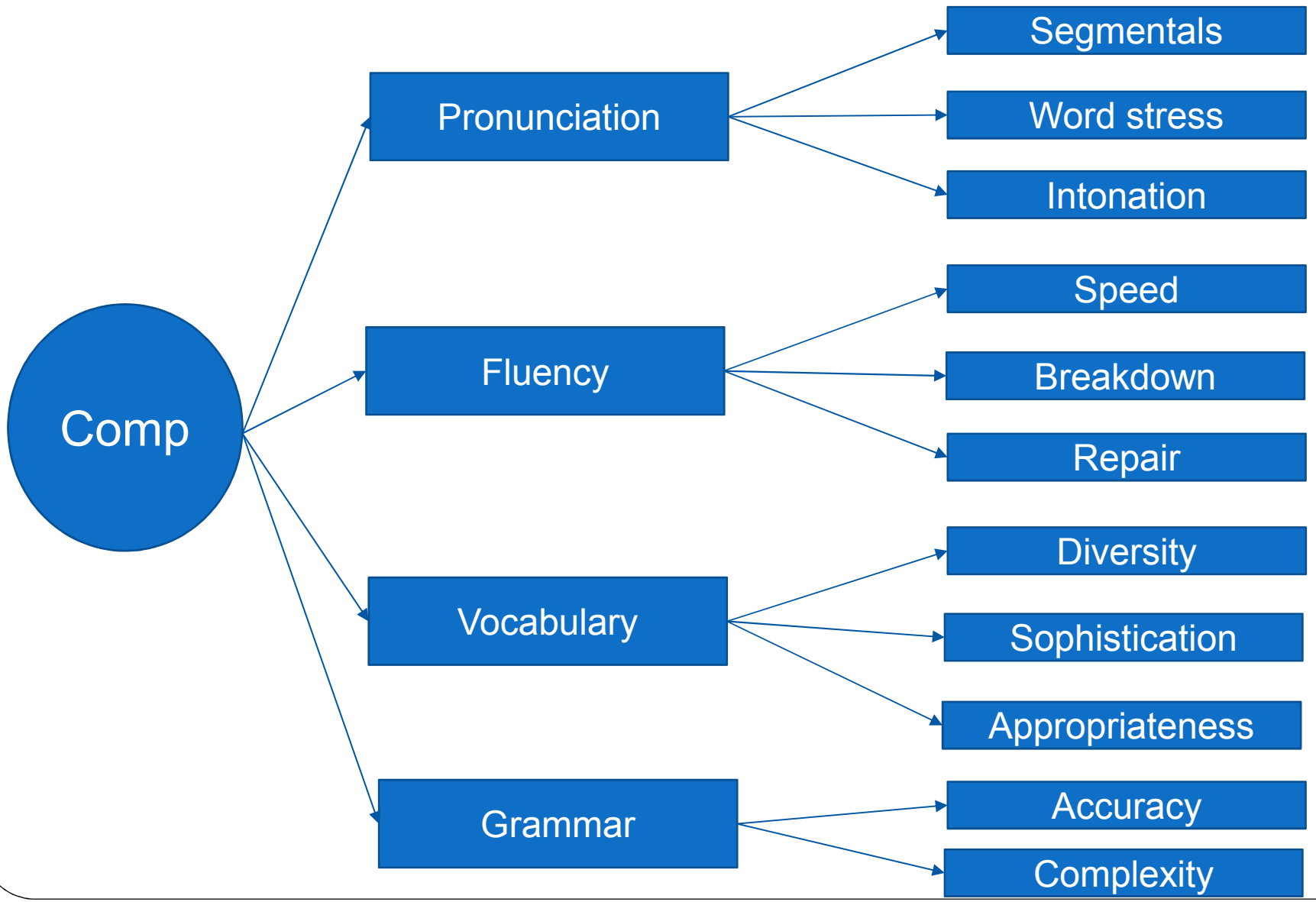
Focusing on better pronunciation or lexicogrammar?

What should be prioritized?

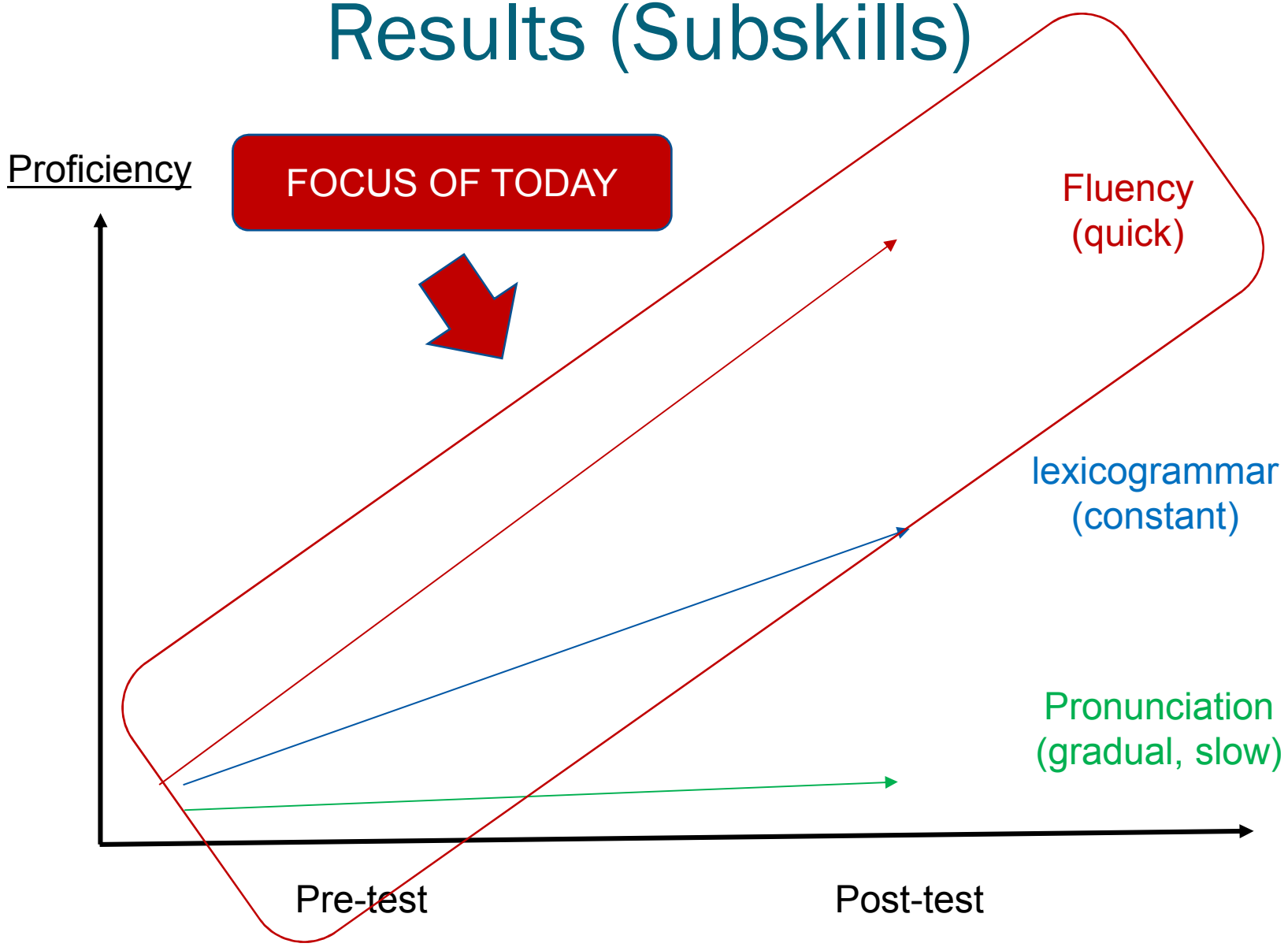
Results (Global skills)



How can we analyze L2 speech?



Results (Subskills)



How to assess fluency?

Background

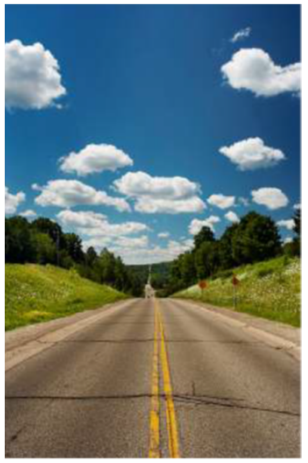
- Fluency is defined as the optimal, smooth and fluid delivery of L2 speech (Segalowitz, 2016).
- Different from pronunciation/lexicogrammar accuracy and complexity
- Fluency explains approximately **50**% of variance in L2 oral proficiency (e.g., comprehensibility) (see Derwing et al., 2004; Kang et al., 2010).

Key references

- Derwing, T.M., Rossiter, M.J., Munro, M.J. & Thomson, R.I. (2004). L2 fluency: Judgments on different tasks. *Language Learning, 54,* 655–679.
- Kang, O., Rubin, D., Pickering, L. (2010). Suprasegmental measures of accentedness and judgments of English language learner proficiency in oral English, *Modern Language Journal, 94,* 554–566.
- Segalowitz, N. (2016). Second language fluency and its underlying cognitive and social determinants. *International Review of Applied Linguistics in Language Teaching*, *54*(2), 79–95.

Let’s listen to a L2 speech sample, and discuss how to assess its fluency!

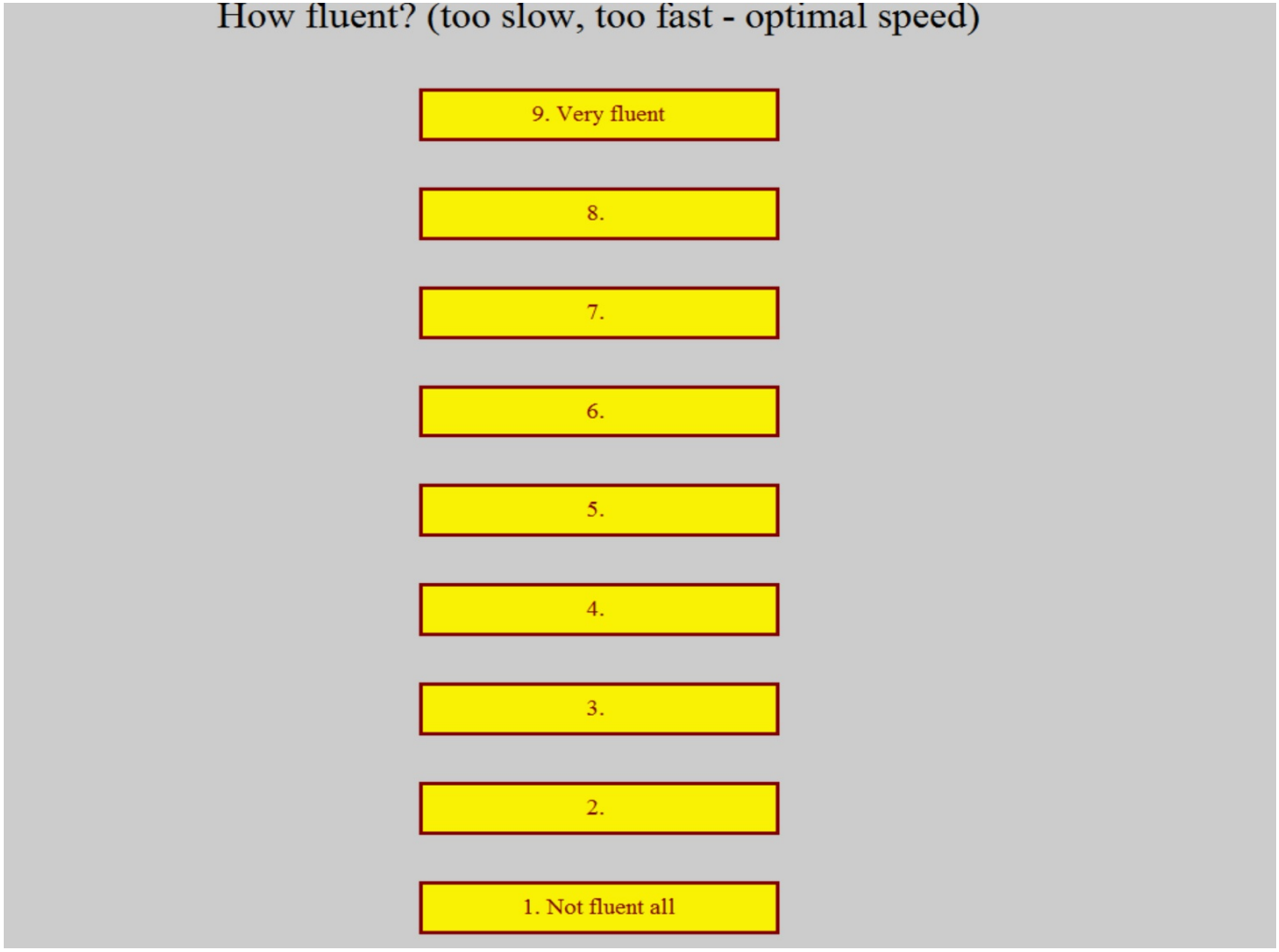
- A Japanese learner of English (ID101)
- A freshman student @ Waseda



QUESTIONS: How can we measure her "fluency"? According to your own analysis of fluency, is she a fluent speaker? If so, why and how so?

Perceived Fluency (subjective)

- A 9-point scale: (*1 = Dysfluent, 9 = Fluent*)



According to my native speaking judges in London…

Judge A	Judge B	Judge C	Judge D
8	7	6	7

Judge E	Judge F	Judge G
7	6	5

(***1 = Dysfluent, 9 = Fluent)

Average Score

Utterance fluency

Speed

- No. of syllables/words per minute including/excluding silence

Breakdown

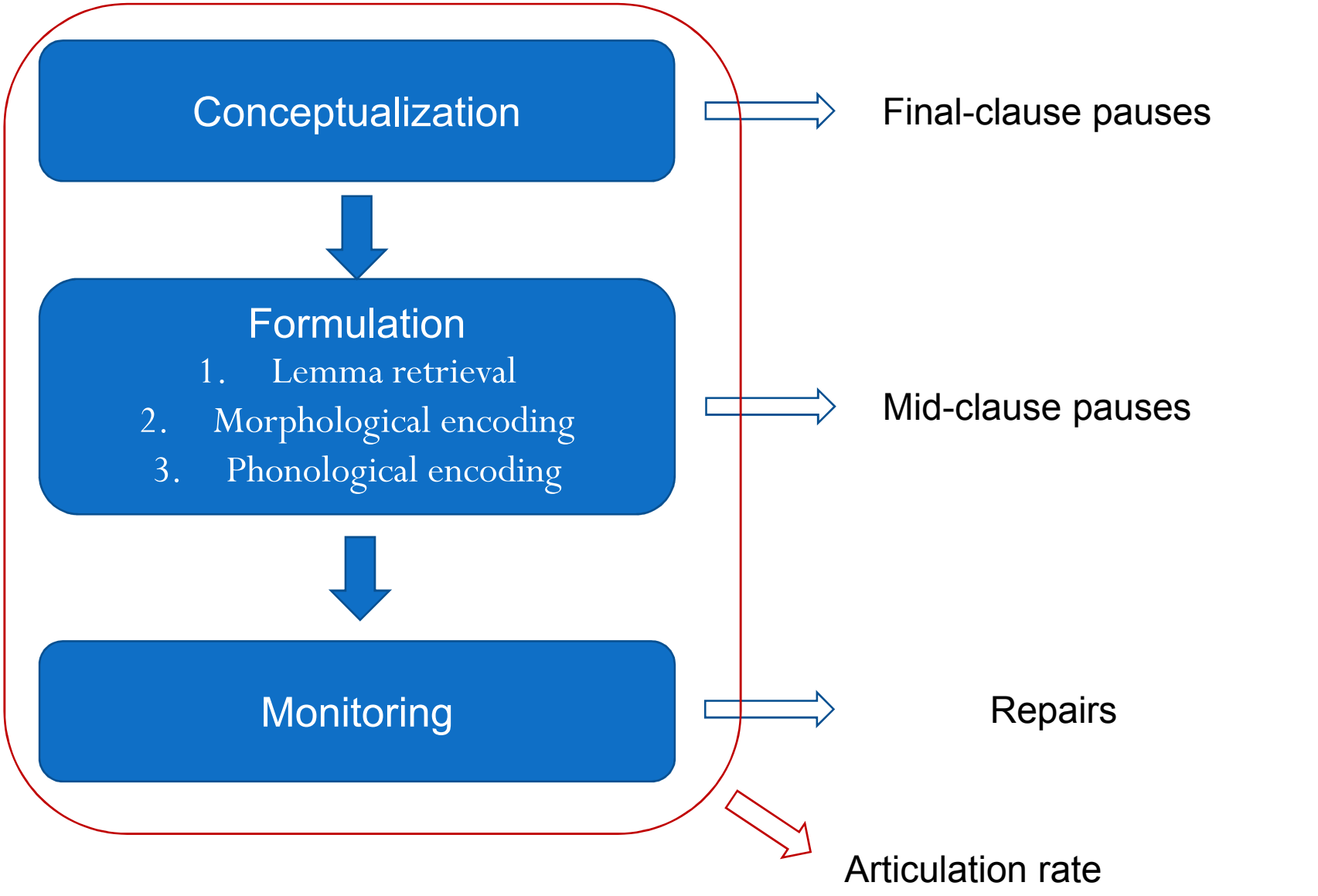
- No. of filled pauses (eh, ah, oh) & unfilled pauses (silence, 250ms) divided by a total number of words

Repair

- No. of repetition & self-correction divided by a total number words

These measures are uniquely tied to certain stages of L2 speech production processes…

L2 Speech Production Model (Kormos, 2012)



Steps for Utterace Fluency Analyses

(1) Check the no. of **words**/**syllables** by submitting transcripts to (http://www.wordcalc.com/).

- There is a table on the drive way, it's rain.
- Three guys are playing guitar and they are praying folk music.
- There are a few crowds in the blue sky uh load is uh going to somewhere.

→ 38 words,
39 syllables

Steps for Utterace Fluency Analyses

(2) The total number and duration of **filled pauses** (ah, eh, oh, umm) can be calculated via transcripts.

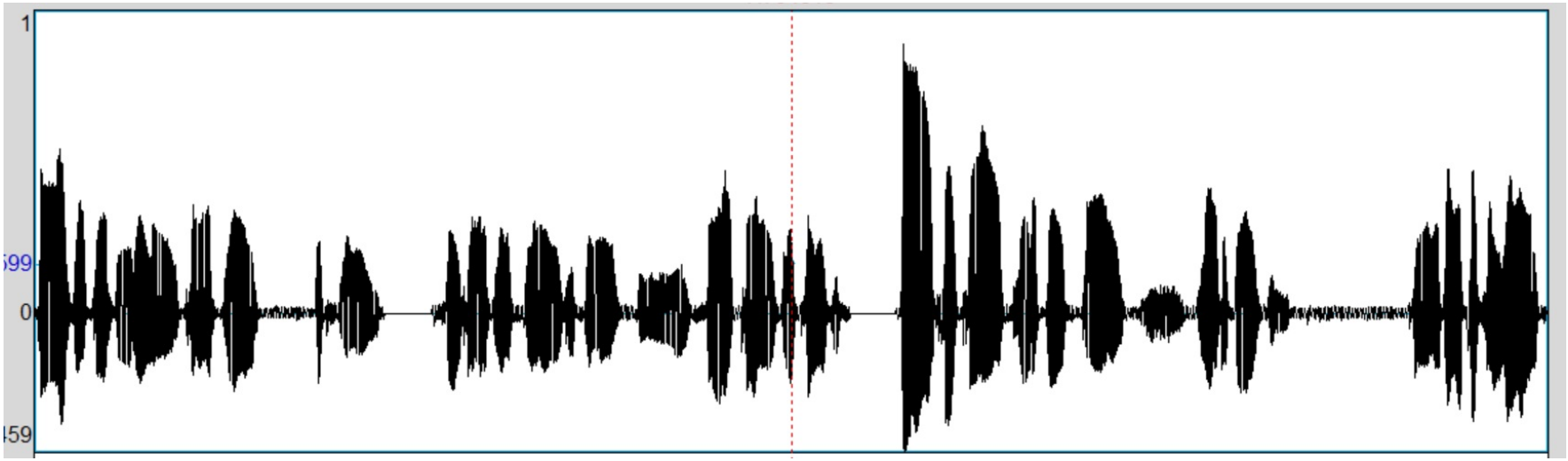
- There is a table on the drive way, it's rain.
- Three guys are playing guitar and they are praying folk music.
- There are a few crowds in the blue sky **uh** load is **uh** going to somewhere.

→ 2 filled pauses

Steps for Utterace Fluency Analyses

(3) Any **silence** more than 250ms should be counted as "**unfilled pauses**".

Check a waveform (via Praat)



Automatic silence detection

Phonation time: *Praat*

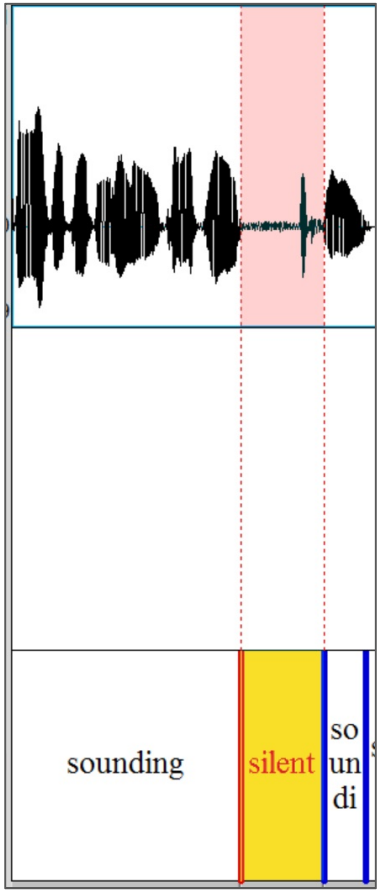
>>Annotate

>>To TextGrid Silence

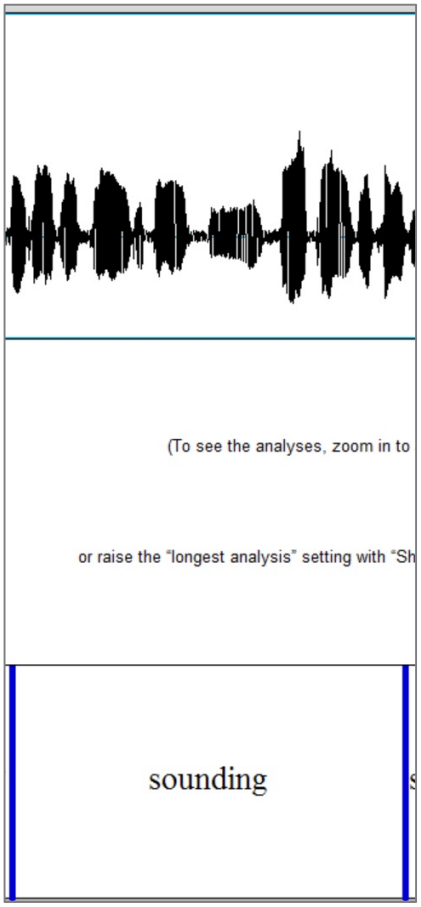
>>Set to the following condition:

Silence threshold	**-35.0**
Minimum silent interval duration	0.25
Minimum sounding interval duration	0.1
Silent interval label	Silent
Sounding interval label	sounding

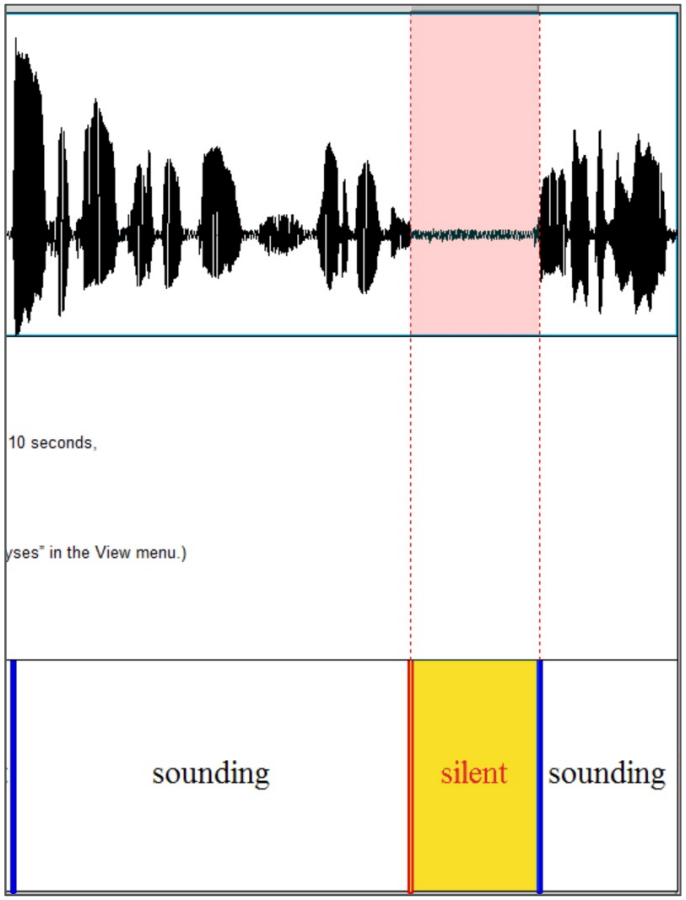
Automatic silence detection



There is a table on the drive way, [**PAUSE**] it's rain.



Three guys are playing guitar and they are praying folk music.



There are a few crowds in the blue sky uh Road is [**PAUSE**] uh going to somewhere.

Steps for Utterace Fluency Analyses

(4) Check if filled/unfilled pauses occurred **within** clauses or **between** clauses

- There is a table on the drive way. [UPfinal] It's rain.
- Three guys are praying guitar and they are praying folk music.
- There are a few crowds in the blue sky. Uh [FPfinal] Road is [UPmid] uh [FPmid] going to somewhere.

No. of filled pauses within/between clauses (1, 1)

No. of unfilled pauses with/between clauses (1, 1)

Steps for Utterace Fluency Analyses

(5) **Phonation time (sec)** can be calculated (i.e., "total length" minus "all unfilled pauses"). Then, divide the no. of syllables by the phonation time (sec) to calculate **articulation rate** (no. of syllables per sec)

Total phonation time: 11.85 (excluding any silence > 250 ms)

Total no. of syllables = 39

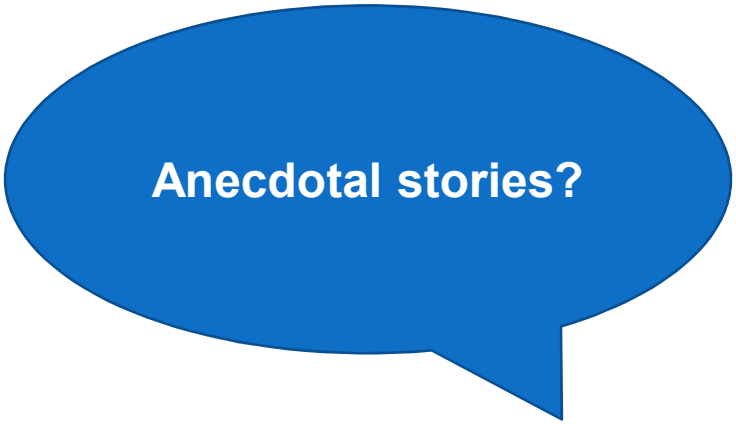
Articulation rate = 3.29 syllables per sec

Key references

- De Jong, N. H., Groenhout, R., Schoonen, R., & Hulstijn, J. H. (2015). Second language fluency: Speaking style or proficiency? Correcting measures of second language fluency for first language behavior. *Applied Psycholinguistics*, *36*(2), 223–243.
- Kormos, J. (2012). *Speech production and second language acquisition*. Mahwah, N.J.: Lawrence Erlbaum Associates.
- Lambert, C., Kormos, J., & Minn, D. (2017). Task repetition and second language speech processing. *Studies in Second Language Acquisition*, *39*(1), 167–196.
- Munro, M., & Derwing, T. (2001). Modeling perceptions of the accentedness and comprehensibility of L2 speech: The role of speaking rate. *Studies in Second Language Acquisition*, *23*, 451–468.

Question 2

What kinds of activities can be facilitative of L2 fluency development?



1. Skill acquisition perspectives

(let's get it right from the very beginning)

Automatization of declarative knowledge

- L2 learners increase the control over what they have partially acquired.

- They need to practice the L2 in relatively *familiar* and *easy* tasks *repetitively* under *communicative pressure* in order to increase their fluency and control over what they have already learned.

(see DeKeyser, 2012)

Research Evidence

De Jong & Perfetti (2011)

LANGUAGE LEARNING
A Journal of Research in Language Studies

Language Learning ISSN 0023-8333

Fluency Training in the ESL Classroom: An Experimental Study of Fluency Development and Proceduralization

Nel de Jong

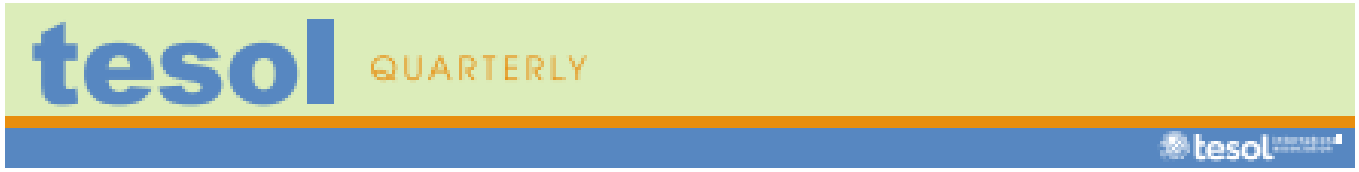
Vrije Universiteit Amsterdam

Charles A. Perfetti

University of Pittsburgh

Research Evidence

Thai & Boers (2016)



Repeating a Monologue Under Increasing Time Pressure: Effects on Fluency, Complexity, and Accuracy

CHAU THAI
University of Danang
Danang, Vietnam

FRANK BOERS
Victoria University of Wellington
Wellington, New Zealand

Fluency Activity: 4-3-2

My most unforgettable trip was…

4 min

My most unforgettable trip was…

3 min

My most unforgettable trip was…

2 min

2. Interactionist perspectives

(let's first use language for meaning & get it right in the end)

My research project:
Google Hangouts Project

Saito, K., & Akiyama, Y. (2017). Video-based interaction, negotiation for comprehensibility, and second language speech learning: A longitudinal study. *Language Learning, 67,* 43-74.

A credited language-exchange course between Waseda (Japan) and Georgetown (US)

Japanese learners of English

American learners of Japanese

Saito & Akiyama (2017)

When?

- 2014 Fall

Who?

- 15 students at Waseda (L2: English)
- 15 students at Georgetown (L2: Japanese)

How?

- Via weekly conversation exchanges using a video-conferencing tool (i.e., Google Hangouts) over one academic semester

Treatment

1. Scheduling sessions with much flexibility using own computers

2. Visual-based conversation in English (30min)
   - Choosing two photos on weekly themes (e.g., pop-culture, sports)
   - Providing discussion topics for each photo

3. Visual-based conversation in Japanese (30min)

4. Report the date/time to the researcher

Negotiation for Comprehensibility

1. To promote incidental FonF, NS interlocutors were encouraged to provide *conversational* (rather than *didactic*) recasts.

2. Reformulating NNSs' utterances, when they perceived certain linguistic errors as the potential danger of successful communication in the future

THANK YOU!!