

Beyond Intuition: Identifying Key Factors Affecting L2 Speech Comprehensibility

- **Comprehensibility:** “the perceived ease or difficulty listeners experience when understanding L2 speech” (Munro & Derwing, 1995)
- Generally measured **holistically** using **listeners’ intuition** (Isaacs & Trofimovich, 2012)
- How do we pinpoint the **specific speech features**?



Dynamic Rating of Comprehensibility

Method

- Adaptation of Nagle et al. (2019) **Dynamic approach** to comprehensibility.
- **Raters:** 58 English-L1 listeners
- **[While listening]** Click a button whenever feeling difficulty understanding the speaker.
→ **Zones with higher click activity** can be used as an indicator of factors that affect comprehensibility.
- **[After listening]** Write comments on how the speaker can improve comprehensibility.

DynamicRater: Open-source software for crowd-sourced dynamic rating



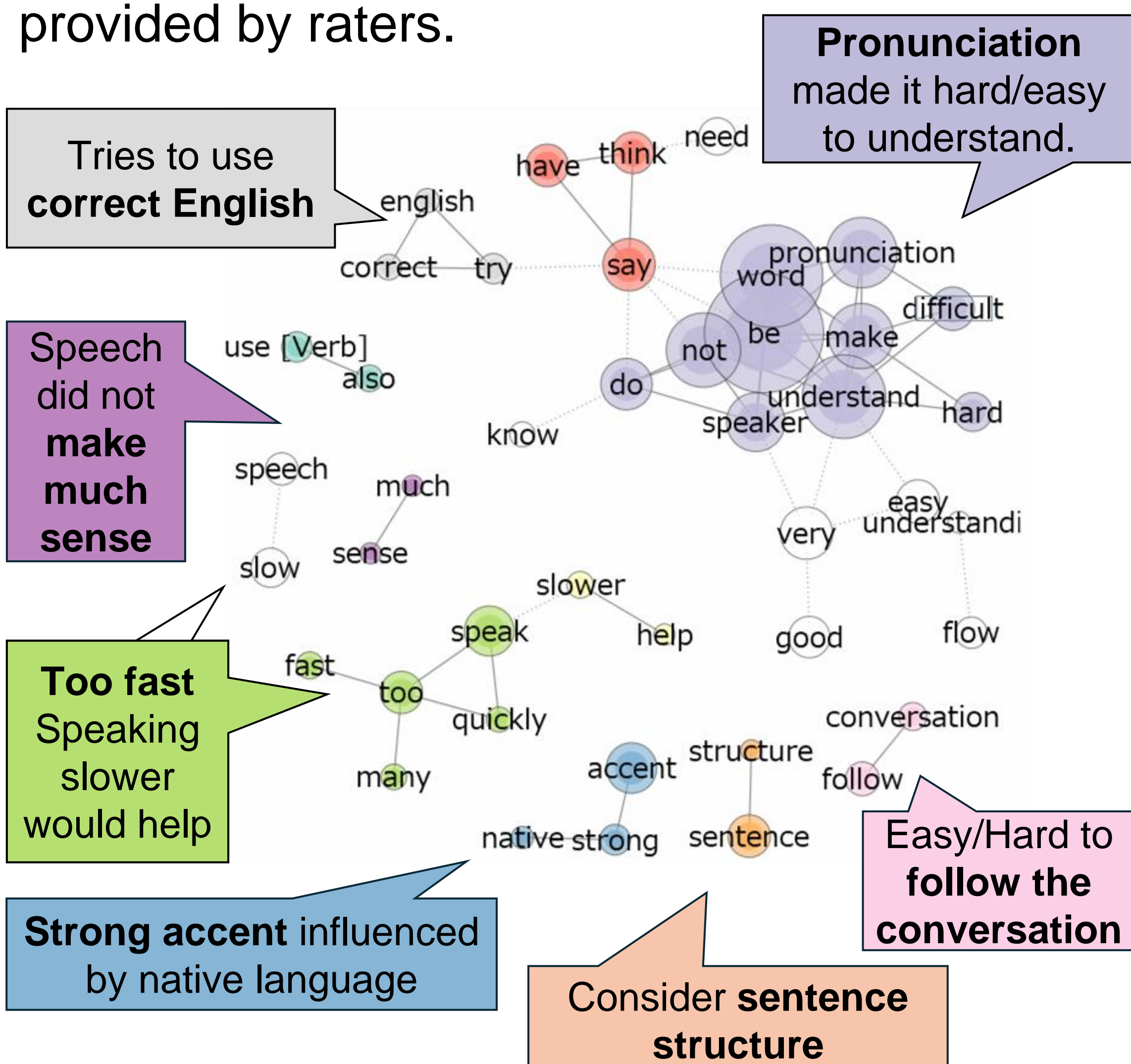
Dataset

- Speech samples from **The CLES Corpus of Spontaneous L2 English** (Coulange et al. 2024).
- Part of the audio used here is available for research.
- Each sample lasts from 26 to 66 s. (M=41)
- 16 samples recorded by French-L1 learners of English (B1/B2 levels) were analyzed.

Investigating Factors Affecting Comprehensibility

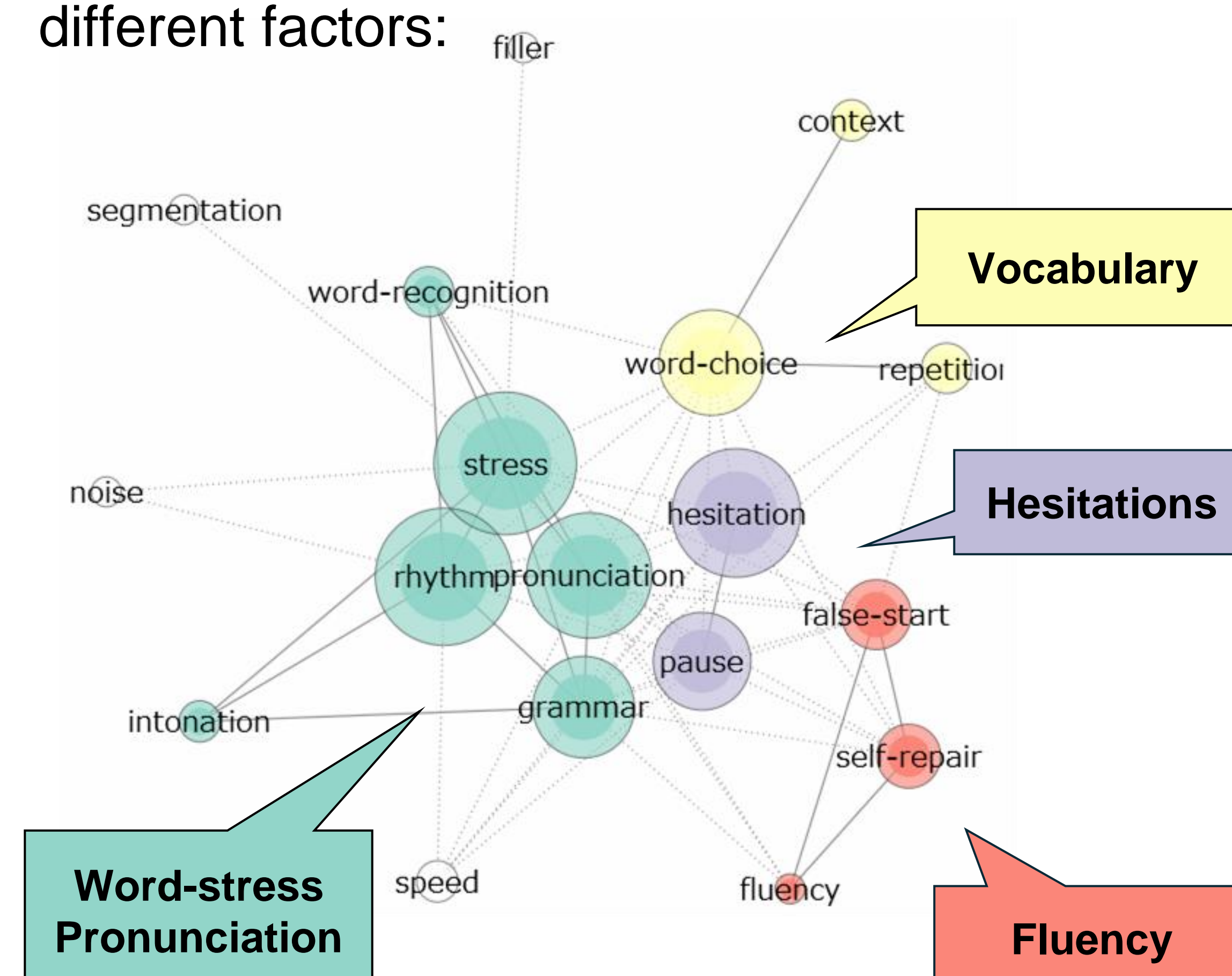
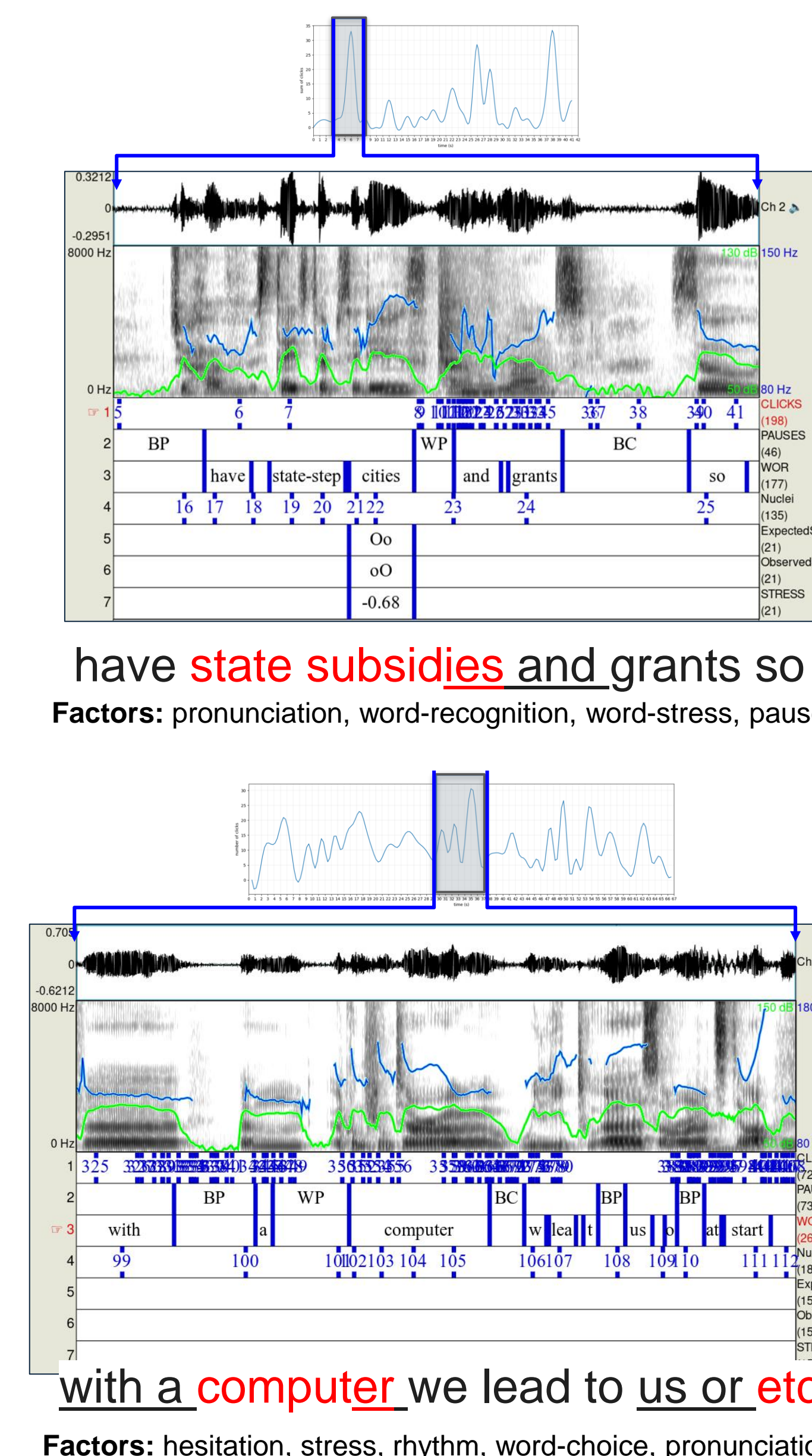
Holistic Approach

Concordance analyses of 794 comments provided by raters.



Dynamic Approach

Manual annotation of 50 peaks of effort from the dynamic ratings analysis reveals that most peaks are preceded by a combination of different factors:



Discussion

- Holistic, intuitive rating methods may fail to identify **specific problems** in L2 speech.
- Dynamic approach can pinpoint where in an utterance comprehension is impaired.
- Comprehension is often hindered by a combination of factors.

Need for more **focused** and **accessible** feedback

References

- Coulange, S., Fries, M.-H., Masperi, M., Rossato, R. (2024). A corpus of spontaneous L2 English speech for real-situation speaking assessment. In Proceedings of the 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation (LREC-COLING 2024), pages 293–297.
- Isaacs, T., & Trofimovich, P. (2012). Deconstructing comprehensibility: Identifying the linguistic influences on listeners’ L2 comprehensibility ratings. *Studies in Second Language Acquisition*, 34(3), 475–505. doi:10.2307/26328952
- Munro, M. J., & Derwing, T. M. (1995). Foreign accent, comprehensibility, and intelligibility in the speech of second language learners. *Language Learning*, 45(1), 73–97. doi:10.1111/j.1467-1770.1995.tb00963.x
- Nagle, C., Trofimovich, P., Bergeron, A. (2019). Toward a dynamic view of second language comprehensibility. *Studies in Second Language Acquisition* 41(4), 647–672. doi:10.1017/S0272263119000044
- Saito, K. (2021). What characterizes comprehensible and native-like pronunciation among English-as-a-second-language speakers? Meta-analyses of phonological, rater, and instructional factors. *Tesol Quarterly*, 55(3), 866–900. doi:10.1002/tesq.3027