Spanish Linguistics and Analysis: Colombian Dialect Vs. Andean Dialects

Glenis Mendoza, and Mrs. Yeimy Roberto

01. Introduction

- There are over 20 distinct Spanish dialects worldwide, shaped by history, landmarks, and regional factors, each representing the culture of its speakers.
- Dialects preserve the history of a region, acting like a fingerprint that reflects past inhabitants, wars, and cultural shifts. This includes the historical footprint of the past languages in a given region.
- Studying dialects is crucial for understanding the role of speech in human evolution and gaining a clearer picture of linguistics.
- The research focuses on a Colombian Spanish dialect influenced by Quechua, spoken by over 10 million people across Peru, Ecuador, Argentina, Bolivia, and other parts of South America .
- Linguistic study of dialects is vital for understanding communities, personality, and human development.
- There are still many gaps in the literature of language evolution, specifically of how a language has been shaped by its people and vice versa.
- This research connects a Colombian region's dialect to its historical roots by exploring unique intonation patterns, helping to remove the stigma of "correct" dialects and expand linguistic understanding.

02a. Methodology

- A total of 26 participants (16 female, 10 male) were recorded, these preliminary results are based on 6 of them.
- 80 Pre-designed sentences were used to gather specific range of vocals.
- The audio recordings were analyzed using Praat software (Boersma & Weenik, 2004), breaking down the speech in four ways: individual words, syllables, Boundary Indices (BI) and Tones following the Sp-ToBI labelling system and (Aguilar et al., 2024) based on the AM model (Pierrehumbert, 1980).
- Each category helps break down the different intonations in the participants speech based on the beginning of the sentence to the end.
- This tells us what words this dialect of Spanish chooses to emphasize.
- The intonation data was analyzed by measuring changes in Hertz (Hz), with frequencies above 8 Hz indicating a change in intonation.
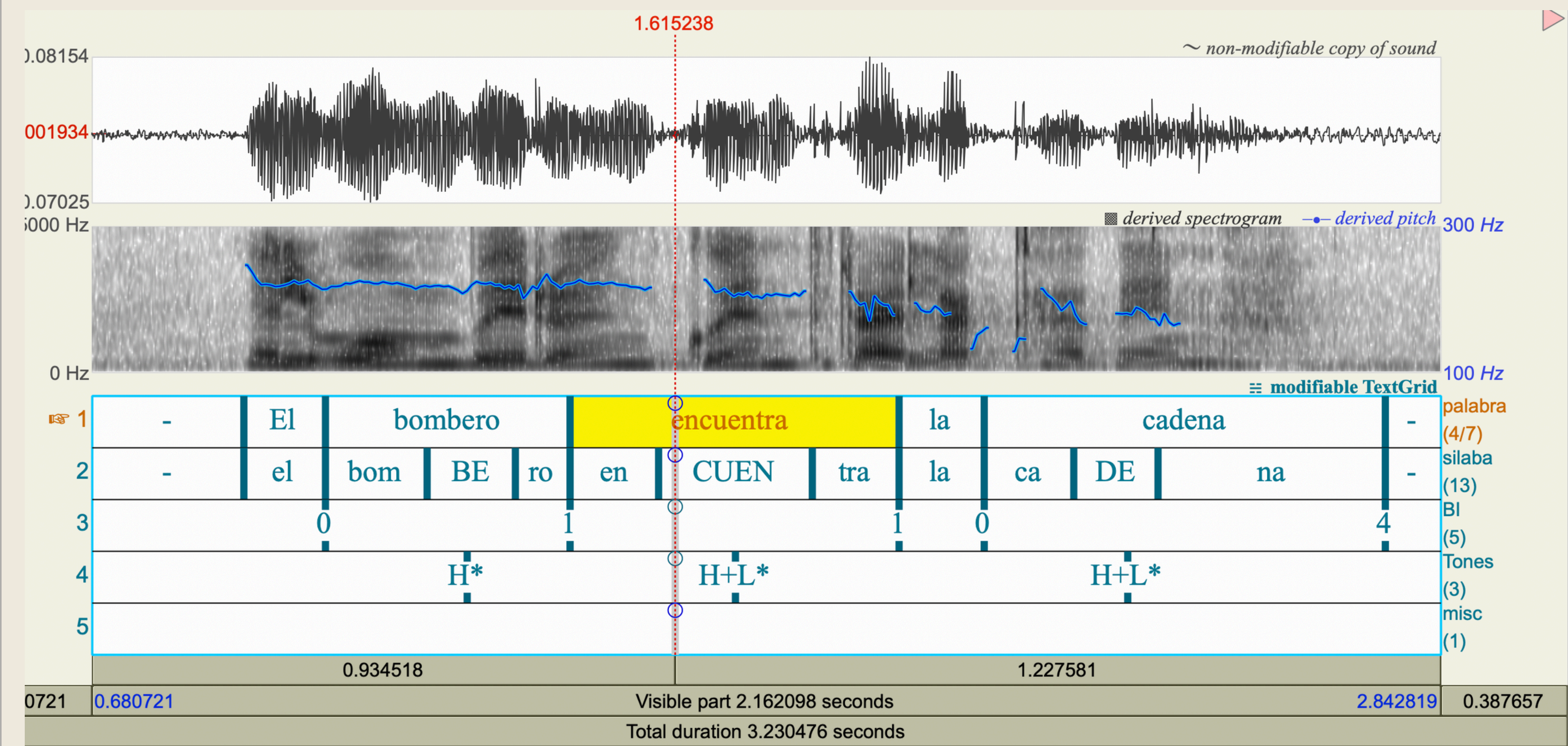
02b. Methodologies: Praat

Figure 1. analysis of Hz and tones

03. Results

- Preliminary results show that Pasto Spanish intonation shares patterns with Spanish varieties spoken by Quechua speakers, indicating regional overlaps in language that lead to unique dialects shaped by migration, colonization, political influence, or geographical isolation.
- These speech pattern similarities contribute to understanding the blending of regional languages into new transnational languages.
- The study's findings provide valuable acoustic evidence for syntax studies on focus marking, offering insights into how the brain structures information.
- A limitation of the research is the small sample size and manual analysis on Praat software, which may introduce margin errors, leading to challenges in obtaining broader representations of populations in linguistic studies.
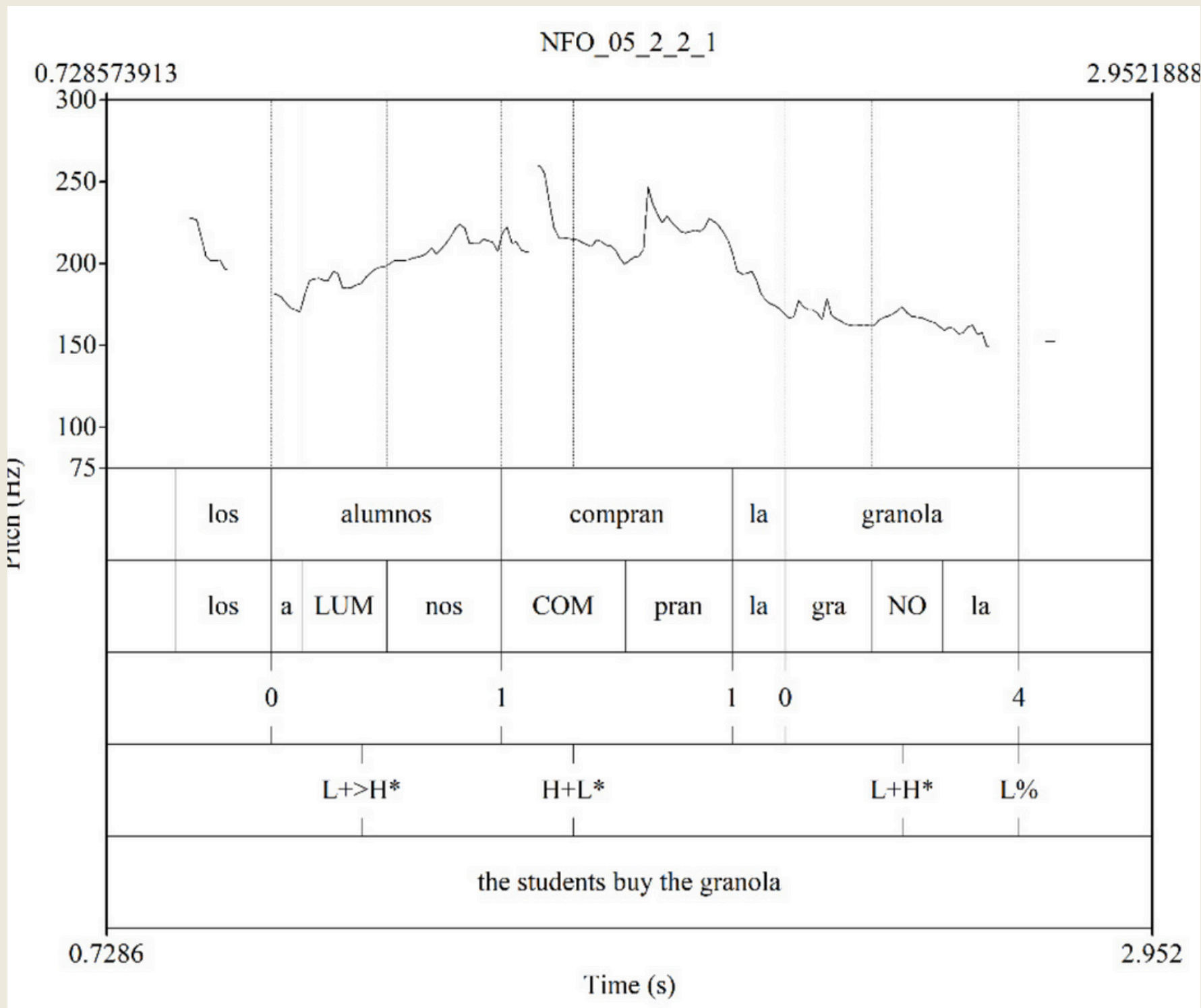
04a. Explanation of Data

Figure 4. Spectrogram of a sentence with narrow-focus on the object.

Figure 3. Broad focus sentence in Spanish (Roberto Avilán, 2018).
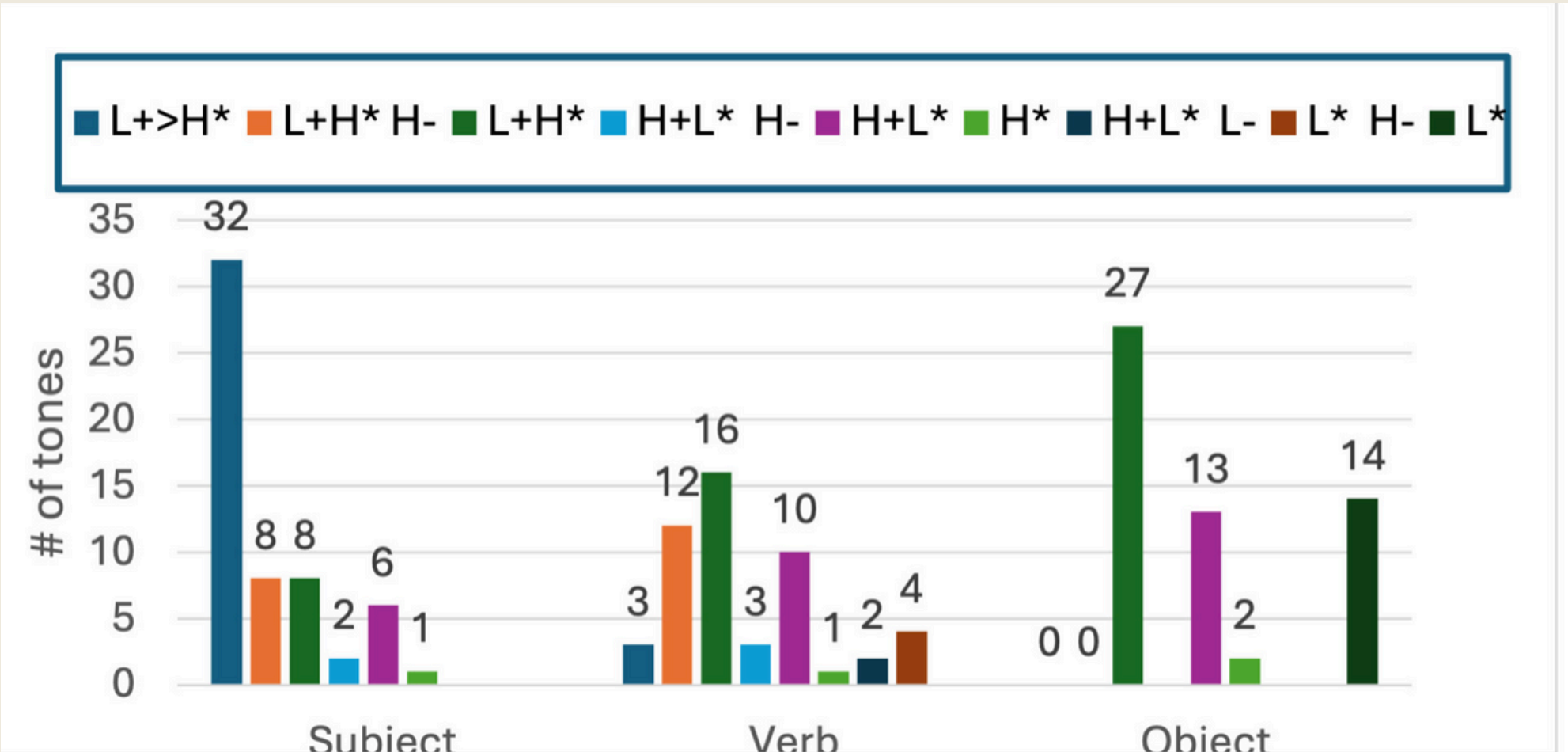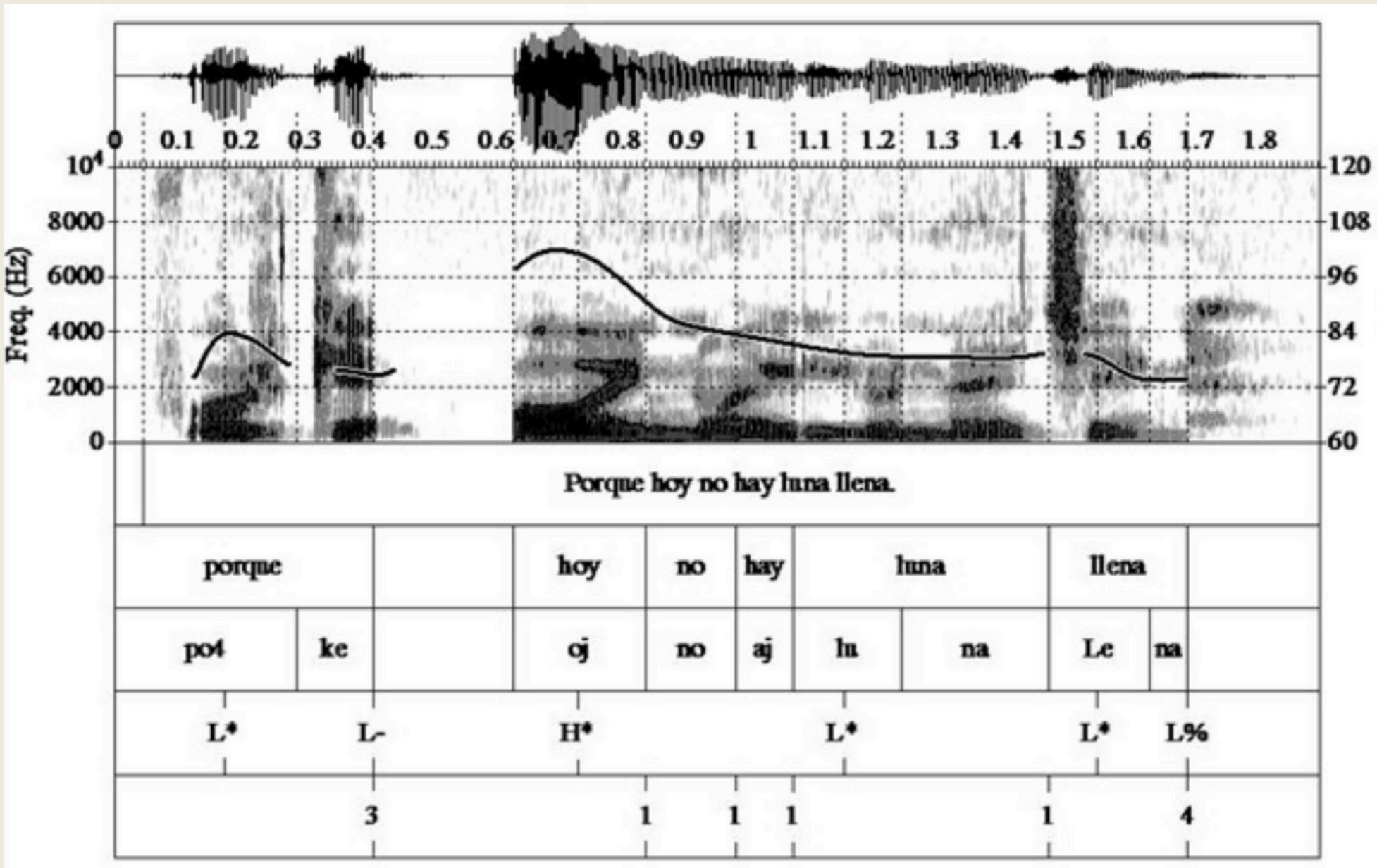
04b. Understanding data

Figure 2. Bar chart with the contours of sentences with a narrow-focus on the object (Roberto, 2025).

05. Conclusions

- This research examines a unique Spanish dialect spoken in Pasto, Colombia, contributing to inventories of pitch accents that indicate focus in speech.
- These inventories support the development of speech recognition apps for isolated dialects influenced by indigenous languages, improving accessibility and accuracy.
- Enhancing speech recognition for diverse dialects benefits individuals with limited movement by optimizing commands, reducing repetition, and personalizing interactions.
- Automatization of data analysis will enhance linguistic research by allowing the use on a larger sample and providing reliable outcomes.

References

Aguilar, L., De-la-Mota, C., & Prieto, P. (Eds.). (2024). Sp_ToBI training materials. http://prosodia.upf.edu/sp_tobi/

Boersma, P., & Weenink, D. (2024). Praat: Doing phonetics by computer (6.4.10) [Computer software]. http://www.praat.org/

Pierrehumbert, J. B. (1980). The phonology and phonetics of English intonation (Doctoral dissertation, Massachusetts Institute of Technology).

Roberto Avilán, Y. J. (2018). Acercamiento a la entonación del español de Bucaramanga [Approach to the intonation of Spanish spoken Bucaramanga] [Master's thesis, Instituto Caro y Cuervo]. http://bibliotecadigital.caroycuervo.gov.co/id/eprint/1307

Roberto, Y. (2025). New vs. Old Information Intonation Strategies in the Spanish Spoken in Pasto, Colombia. Hispanic Studies Review, 9(1).