Dissertation Prospectus

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1 Introduction

My dissertation will be focused on the interactions between tone and voice quality in Santiago Laxopa Zapotec and their implications for the phonetic-phonology interface. Santiago Laxopa Zapotec is an Otomanguean language that allows for nearly all combinations of its five tones and four phonation types.[1]

This dissertation will address this interaction by explaining why tone and voice quality is apparently so compatible in Otomanguean languages. Currently there is one account called the Laryngeal Complexity Hypothesis (Silverman 1997a,b, Blankenship 1997, 2002) which explains this in terms of phasing or timing of modal and non-modal phonation. This dissertation will reevaluate the Laryngeal Complexity Hypothesis in light of Santiago Laxopa Zapotec.

Because SLZ appears to have a timing difference between the glottalized portion of the vowel in checked and laryngealized vowels, this dissertation will address how dynamic changes in voice quality are best represented in the phonology. This will be done by performing a Generalized Additive Mixed Model on data collected in 2022 to determine whether a timing difference actually exists. If this timing difference is factual then I will provide a phonological account of timing differences.

Because these different voice qualities are contrastive and there must be some fundamental difference in the phonology in addition to what we see in the phonetics. Additionally, this dissertation addresses why multiple voice qualities are so reliant on the same features. This will be answered by discussing the problems this posses for phonology (especially the difference between checked and laryngealized), how speakers distinguish between the different voice qualities both phonologically and phonetically.

2 Outline and structure of dissertation

I anticipate that the dissertation will contain the following information in the following chapters.

1. Introduction
    - Overview of what tone, voice quality, and their interactions are
    - Introduce research questions and their importance

[1] There are notable gaps between high tone and breathy voice and checked and falling tone.

- Provide roadmap for dissertation

2. Language Background
    - Introduce the main language of study
    - A brief phonetic and phonological description of SLZ
    - Description of the tones
    - Description of the voice quality
3. Theoretical Background
    - Discuss phonetics-phonology interface
    - Introduce and discuss Laryngeal Complexity Hypothesis
    - Talk about current ways of accounting for tone and voice quality
        - Autosegmental–metrical theory
        - Phonological features
    - Current accounts for dealing with timing issues in phonology
        - Gestural Phonology
        - Q-theory
4. Acoustic Study of Voice Quality in SLZ
    - Production study of Voice Quality based on data Maya and I collected.
        - This is essentially parts of the QE that I have been expanding on over the summer.
    - Perception study of Voice Quality
        - This will give a more complete picture about the acoustics of voice quality and will help show what people are relying on when listening to these voice quality contrasts.
5. Measuring Laryngeal Complexity
    - Generalized Additive Mixed Model analysis on the phonation types.
        - What are GAMMs
        - Why use GAMMs?
        - Do this on f0 and the measures that seem reliable
    - Phasing is probably only important for checked and laryngealized vowels

- What does this do for me?

6. The Phonological Structures of Voice Quality and Tone
    - Develop a framework for explaining the timing differences that we observe
    - Develop a framework that accounts for the interaction of tone and voice quality
7. Implications
    - Discuss the implications for my proposal to other languages
    - How does it account for voice quality and tone interactions in other systems
        - Things like tone and voice quality being dependent on each other.
8. Conclusion
    - Summary of the dissertation, key take-aways, etc.

3 Timeline for dissertation

Table 1: Dissertation timeline with milestone and dates

Milestone	Date
Prospectus Completed	September 2023
Apply for funding	Fall quarter 2023
IRB application	Fall quarter 2023
Design perception experiment	Fall 2023
Create Stimuli for experiment	Winter 2024
Pilot the study	Winter/Spring 2024
Travel to Santiago Laxopa	Summer 2024
Process data	Summer 2024
First draft completed	December 2024
Complete defense draft	January 2025
Defend Dissertation	March 2025
Revisions completed	May 2025
Submit Dissertation	May 2025

References

Blankenship, Barbara. 1997. *The time course of breathiness and laryngealization in vowels.* Los Angeles, CA: University of California, Los Angeles dissertation.

Blankenship, Barbara. 2002. The timing of nonmodal phonation in vowels. *Journal of Phonetics* 30(2). 163–191. https://doi.org/10.1006/jpho.2001.0155.

Silverman, Daniel. 1997a. Laryngeal complexity in Otomanguean vowels. *Phonology* 14(2). 235–261. https://doi.org/10.1017/S0952675797003412.

Silverman, Daniel. 1997b. *Phasing and recoverability* (Outstanding Dissertations in Linguistics). New York: Garland Pub.