Final project: Overview

For the final project, your partner group will investigate the **acoustics** of one or more talkers' **language production** in order to answer a **well-motivated question** about human language. Other project types (perception experiments?) may be possible in some cases; please confer with me ASAP.

The final project involves the following steps. Several of these are separate assignments and/or supported by "lab" days in class. I am also available to consult with your group at any stage in the process, but please bring something concrete for us to discuss.

> (a) Identify **research questions** (a **big-picture RQ** and a **measurable RQ**) to investigate; **justify** them with reference to at least one citation from the research literature
>
> (b) Acquire an appropriate body of **acoustic data** to analyze, with explicitly structured **comparison sets** (for example: different conditions in stimuli that you record; different subsets of data that you select from a corpus), in order to address your research questions
>
> (c) Use Praat to **measure acoustic properties** that are relevant for your research questions
>
> (d) **Analyze your results** to determine how they answer your research questions
>
> (e) Produce **slides** and an **oral presentation** to report on your project, similar in structure to phonetics research articles you have read or we have all discussed
>
> • ***Relate your findings*** *to course topics or issues in the research literature whenever possible.*

I. Project stages and deadlines

See separate **information** and **grading-criteria** handouts for more details.

Stage	Description	Points	Deadline
Article proposal	Find an article to help you plan your project	5	**M Nov 3, 11:59pm**
Article report	Explain the research questions, methodology, and results of your reference article	15	**F Nov 7, 11:59pm**
Project proposal	Draft version of: RQs with justification, experiment design, measurement landmarks	15	**W Nov 12, 11:59pm**
Analysis plan	Explicit plan for experiment design, measurement criteria, numerical analysis	25	**M Nov 17, 11:59pm**
Work plan	Plan for distributing project tasks	5	***Due after analysis plan is approved***
Presentation	Present RQs, methodology, results to the class	35	**M Dec 1, W Dec 3**
Revised slides	Respond to feedback and resubmit (optional)	(5 max)	**F Dec 12, 11:59pm**

II. The research questions to investigate

Your research question must have some kind of **phonetically, typologically, or phonologically relevant motivation, justification, or hypothesis** behind it—it is not enough to measure and compare things if you have no particular reason for wondering whether they are different. You might find a **motivation** for your research question from one of the following:

- Results reported in a phonetics paper—does a past experiment give you motivation for trying an extension or a follow-up, perhaps in a different language?
- Predictions made by some phonetic model or physical phenomenon: tube model, aerodynamics, nonlinearity of pitch perception, etc.
- A typological asymmetry, found on WALS Online or elsewhere—if sound type A is more rare than sound type B, can we hypothesize and test for a phonetic reason?
- A prediction made by some phonological theory you have read about or studied
- Previous descriptions of how people think Language X works; you might be able to test for phonetic evidence of a proposed phonological rule, for example

Some ways to look for **ideas and inspiration** for a general direction to pursue might include:

- Consider some interesting or unusual aspect of a language you speak or have studied
- Look at some phonetic phenomenon from a perspective such as speech disorders, second-language acquisition, or sociolinguistic variation
- Browse phonetics journals (see Article Report handout) for ideas you could adapt
- Look through books on reserve for this course for additional topics and phenomena

Your project should attempt to be a **novel contribution**. That said, basing it closely on your source article will give your project structure and may produce interesting data for comparison.

II. Collecting acoustic data

A. General considerations: Answering research questions with data

- What phonetic contexts should you examine to answer your specific question?
- What are good words/sentences/materials to use for testing those contexts?
- What factors, phonetic or other, should you control for in planning your data collection?
- How can you collect the data you need? Record speakers? Use pre-existing data?

B. Option 1: Record your own data

- How many participants will you have? How will you find them? How will you get high-quality recordings of their speech? (no MP3s!)
- How many tokens will you record for each stimulus item?
- Should the stimulus items be embedded in a frame sentence or context?
- Do you think the results are likely to change if participants are aware of the purpose of the experiment? If so, will including distractor items (which you won't actually analyze) in your materials help disguise the purpose?

C. Option 2: Use pre-existing acoustic data

- Where will you find data? Archives of speech recordings / spoken-language corpora? Non-linguistics-specific recordings on the internet? (beware MP3s—use with care!)
- How many tokens of each relevant category will you need to collect?
- What other factors might you need to control for in choosing items for analysis?

D. Guidelines for the scope of the project

Set up your project design so that:

- You are making at least **100 measurements for each person** in your partner group
- You collect **multiple repetitions** (at least 3, maybe more) of the same test item/test sentence, so that you can work with averages of your measurements [if working with existing recordings, you will have to plan for what counts as 'multiple repetitions'; may not be identical]
- Consequence: There is a trade-off between number of speakers or speaker groups, and number of words or phonetic contexts
- Note: If you have a reason (thesis project, past experience, connection to current work in another class, etc.) to propose something other than a *production* experiment involving *acoustic analysis*, I am willing to consider specific requests.

III. Measuring acoustic data

You will use Praat to make measurements from the data that you have collected. What you need to measure depends on what question you are examining. Decide on specific **criteria** for your measurement (on what basis will you decide where and how to take measurements?) and **include a description of those criteria** in your project.

Using Praat scripts for measurement is absolutely fine, but is not required.

IV. The slides and presentation

Your project slides and presentation should be similar in structure to the phonetics papers you have read.

- Explain what research question you are investigating, what motivates that question or makes it interesting, and how your stimuli and measurement techniques are relevant for that question.
- Include data graphics, plus any other diagrams, sample spectrograms, vowel formant charts, or additional information you feel are necessary to explain your project and report your results.
- Relate your results and analysis back to your RQs: do you have answers?
- Apply concepts from our course whenever relevant.
- You will also turn in your raw data, organized systematically, in an Appendix.

V. Revised slides and/or appendix

After the presentations, I will provide feedback and a base grade for the group presentation. The group, or part of the group, may optionally revise and resubmit either the slides, the appendix, or both in a way that responds to feedback.

- The revised submission may earn up to 5 points for those group members that participate in the revision, although the total points from the slides+presentation base grade plus the revision cannot be greater than 35.