Ling 251A/B: Phonology of Global Pop Music
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Day 1: Introduction, what to expect, background

1 Why "global pop music"?

1.1 "Global"

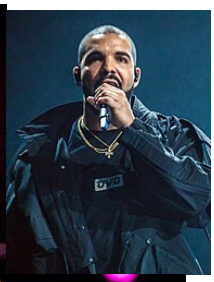
- In the sense of, from anywhere in the world
- But also, in the sense that pop music around the world is to some extend globalized

One huge global influence is African-American musical traditions and innovations

- Try to think of a current pop scene somewhere in the world that has not been influenced by jazz, blues, rock, soul, R&B, disco, rap, or house music… it's hard to, right?
  - Even in genres that mostly don't draw from these traditions, like Hindi film music, there are still a lot of fusion songs that do (disco songs, rock songs in Hindi films)
- If this were a musicology or ethnomusicology course, there would be even more to say
- As for phonology, I see two areas where it's going to matter; maybe more will arise
  - All around the world, people have adapted the idea of **rapping**
    - Some of you may study non-English rapping to get evidence about prosody and rhyme
  - Pop music performance styles often draw from **African-American phonology**—even when the language is not English!
- There have been many attempts to make a "family tree" of music genres, with varying degrees of subjectivity and detail—let's look at a few
  - www.musicgenretree.org/music-genre-tree.html
  - musicmap.info
  - ajrengel-75816.medium.com/7-images-that-show-the-history-of-music-518d6b604bf0
  - trademarkg.com/musicmap/
  - www.spectrumcity.co.uk/

1.2 "Pop"

- These categories can be fuzzy—think of them as clusters in multi-dimensional space

"**Classical**" music, aka Art music	"**Folk**" music, aka Traditional music	"**Popular**" music
   	  	   
Viewed as rooted in a long tradition		Less explicitly oriented to tradition, though it builds on what came before
Emphasis on faithfulness to and continuity with tradition, performing existing works		Emphasis on innovation, creating new works
Can involve purist ideologies		Accepts influences from other genres
Years of formal training in technique and theory	Some are recognized as especially skilled performers, but ordinary people also "perform" it in daily life	Self-teaching is common (it still takes years of hard work to get good!)
Depending on the tradition, composers may be known or unknown	Identity of composers may be lost to time. Performers may change and add to the songs they have learned, becoming composers themselves	Composers are known, but may not be prominently identified; performers are more prominent
Often performed live in formal settings, to an audience	Often produced in the course of daily life, such as while working or socializing, though also for special celebrations	Most often these days, recordings are played in the background of other activities
Success = experts think you're good	Success not always an applicable concept	Success = people buy your music

Photos[1]	Photos[2]	photos[3]

- I want to focus on pop music in this class, because of how it is less tethered to tradition than other types of music
  - Offers songwriters more scope to make their own rules about text-setting and other phonological matters
- I'm also interested in how global pop music styles exchange musical ideas

2 What we can learn from studying the phonology of songs

- Get evidence about the phonology of the language—these are the papers I'm most interested in!
  - Does a language have intermediate degrees of syllable weight?
  - Does a language have stress?
  - Which tones count as "high"?
  - Which features most influence perceived phonetic similarity?
  - etc.
  - ➢ Songs can sometimes be better than a speech corpus
    - E.g., to test for phonetic cues to stress in a speech corpus, you'd need a huge amount of data, to overcome other sources of variability
    - But with songs, a few hundred data points of syllables set to strong and week beats could be enough
- Get evidence about how the music relates to phonology
  - How is rhyme placement used to demarcate lines?
  - How are linguistic phrase breaks reflected in the music?
  - etc.

[1] Papa Demba "Paco" Samb : en.wikipedia.org/wiki/Pape_Demba_%22Paco%22_Samb#/media/File:Pape_Demba_%22Paco%22_Samb_in_Delaware,_side_view.jpg
Umm Kulthum : en.wikipedia.org/wiki/Umm_Kulthum#/media/File:Umm_Kulthum4.jpg
Yo-Yo Ma en.wikipedia.org/wiki/Yo-Yo_Ma#/media/File:Yo-Yo_Ma_performing_with_the_Los_Angeles_Phil.jpg
Sanhita Nandi : en.wikipedia.org/wiki/List_of_Indian_classical_music_festivals#/media/File:Tansen_Samaroha.jpeg
K.P.H. Notoprojo : en.wikipedia.org/wiki/Gamelan#/media/File:COLLECTIE_TROPENMUSEUM_Een_rebabspeler_TMnr_60052115.jpg
[2] Pungmul (Korea) en.wikipedia.org/wiki/Pungmul#/media/File:Folk_village_-_Korea.jpg
Diablada (Andes): en.wikipedia.org/wiki/Diablada#/media/File:Carnaval_de_Oruro_dia_I_(60).JPG
Jig (Ireland) : en.wikipedia.org/wiki/Irish_traditional_music#/media/File:HaymakersJig.jpg
Music at a supra (Georgia) : foodfuntravel.com/history-of-the-georgian-supra/
[3] Shakira: en.wikipedia.org/wiki/Shakira#/media/File:Shakira_Rio_06.jpg
Drake: en.wikipedia.org/wiki/Drake_(musician)#/media/File:Drake_July_2016.jpg
Alpha Blondy: en.wikipedia.org/wiki/Alpha_Blondy#/media/File:Alpha_Blondy_2007.07.12_003.jpg
BTS: en.wikipedia.org/wiki/BTS#/media/File:BTS_at_American_Music_Awards_November_21,_2021.jpg

3 Where does phonology come into songwriting?

- Pop songs can be composed in different ways
  - Composer(s) think(s) up the music and lyrics at the same time
  - First the music is created, then lyrics are created to go with it, possibly by different composer(s)
  - First the lyrics are created, then music is created to go with it, possibly by different composer(s)
  - Music and lyrics have been composed for one language, and translator(s) create(s) new lyrics for the same music, possibly aiming for similar meaning
- The process is not like going from underlying form to surface form
  - Where, even with an infinite candidate set, there's a clear way to choose the winner (intersecting finite-state automata à la Eisner 1997, harmony optimization in a neural network à la Prince & Smolensky 1997…)
- It's probably more like hill-climbing in a bumpy landscape, with the ability to jump around
  - Sometimes you're trying to find the best option within a constrained space

[4]

"Don Music" from Sesame Street, who would despair over being unable to complete couplets like "Mary had a little lamb whose fleece was white as snow, And everywhere that Mary went the lamb was sure to ___"

  - Other times, you just let things pop into your head that sound good together, then maybe refine them

[4] bobbiesboatsauce.com/blogs/bobbies-blowhole/the-tao-of-don

4 How does this relate to a phonological grammar? (Hayes 2009)

- Hayes identifies some conceptual problems for trying to put songwriting into a tableau
  - Normally in phonology, what prevents every word from coming out as [baba] (or whatever is least marked) is *faithfulness* to the underlying form
    - But what exactly would you be faithful to in songwriting?
  - The "missing remedy": sometimes a line of a song is just bad, with no clear way to fix it
- It's more like coining a word (Martin 2007) or naming a person (Shih 2012) or naming a Pokémon (Kawahara, Noto & Kumagai 2018)
  - the phonotactic grammar can tell you what *not* to do, but it can't tell you what *to* do
- Hayes's proposal, part I: a candidate is in the "output set" of a grammar if it's a possible output for at least one input
  - E.g., [ˈbluɾi] is in the output set of English phonology because /ˈbluti/, /ˈbludi/, and /ˈbluɾi/ (among others) all map to it
- Haye's proposal, part II: possible songs are those that are in the intersection of three output sets:
  - output set of the (genre-specific) music generator
    - e.g., a line of English folk verse has the following rhythmic form

```
(2) [         x                             x                    ]  line
    [         x              x    ][        x              x     ]  hemistichs
    [ x       x    ][ x      x    ][ x      x    ][ x      x     ]  dipods
    [ x   x ][ x   x ][ x   x ][ x   x ][ x   x ][ x   x ][ x   x ][ x   x ]  feet
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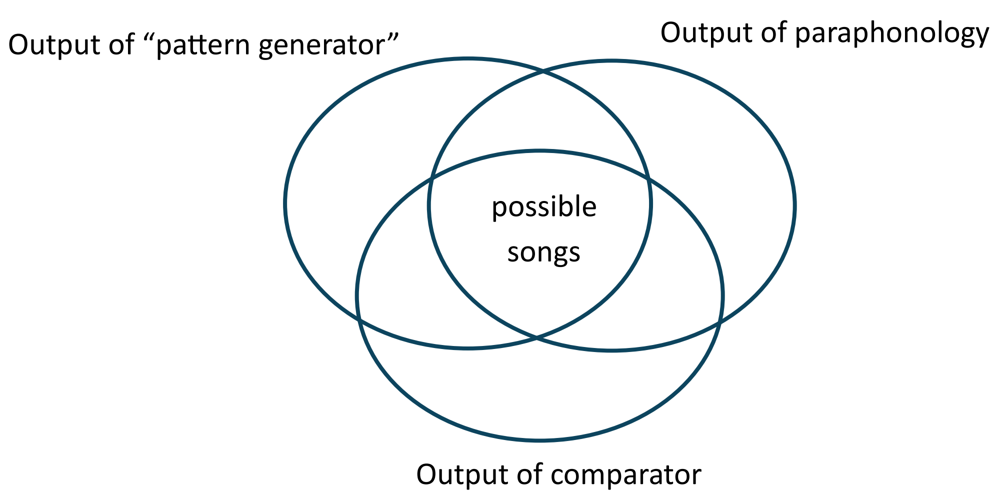
(p. 115)

  - output set of the language-specific "paraphonology"
    - e.g., *riot* [ˈɹaɪ.ət] is allowed to become [ˈɹaɪt]
  - output set of the "comparator", which evaluates pairings of music and lyrics
    - e.g., "don't have too many beats in a row with no syllable"



5 Let's take a look at the topics in the syllabus

- I already know of one change I want to make (really want to add (Liu et al. 2023), but can't decide what to eliminate!)

6 Course requirement #1: Discussion (everyone enrolled)

6.1 We're going to use the method developed in (Soranno 2010)

- We're going to use the method developed in (Soranno 2010)
- Why do we want to discuss readings anyway, instead of just reading them? Here are some reasons Soranno lists
    - increase student involvement → increase motivation & attention → increase learning of the content
    - practice expressing ideas
    - practice evaluating "logic of and evidence for" a position
    - increase "intellectual agility"
    - "develop skills of synthesis and motivation"
    - develop your skills at facilitating discussions in your own classes

- Pitfalls Soranno is trying to avoid
    - Presenting student over-prepares, to become the expert on the paper
    - Everyone else under-prepares, feeling little responsibility for the paper
    - Participation is uneven
    - Emphasis on individual contributions rather than "progression toward a collective goal of improved understanding or synthesis of a topic"
- Goal: get everyone engaged, not just the person presenting the paper

6.2 How it will work

- When we start to discuss a reading, we randomly assign ourselves to one of three roles
    - Facilitator (1 person): make sure everyone has a chance to speak, etc.
    - Recorder (1 person): write down the main ideas that come up
    - Group participants (everyone else): provide the "thought power and ideas"
- Start with everyone providing…
    - something positive about the reading
    - a topic for discussion

recorder then writes these on board

- Facilitator decides the order of topics to discuss, takes group through them
    - Recorder types notes
- Last 5-10 minutes: Facilitator asks participants to summarize
    - Recorder writes summary on board
- After class: Recorder posts notes and photo of board to BruinLearn

Let's look at the table in Soranno's paper

7 Course requirement #2: Project (those enrolled for 4 units)

7.1 Steps—these will be a bit different if you want to do a perception study or otherwise vary the recipe

- Pick a language (it can be English!)
- Make sure you can find sheet music—or lyrics, or recordings, if that's what you're going to use—for pop music in that language
- Brainstorm some research questions
- Pick a research question
    - **Week 2 workshop**: everyone briefly present your topic, play some of an example song, show us some sheet music/lyrics (how much could you find?), say what you think you might be coding for, tell us a little about what related research you found
- Figure out what you'd have to code for
- Code one song
    - **Week 4 workshop**: show us your coding for one song, discuss challenges you ran into, how many data points you got.
- Develop your statistical pipeline—ideally in R, but could be Excel
    - Whatever is going to get you from data to analysis and plots
    - **Week 6 workshop**: show us one plot (it can be crude!) and explain its relevance
- Revise the coding scheme if necessary, and code some more songs
    - **Week 8 workshop**: show us some updated plots
- **Week 10**: Present your results
- Exam week: submit (as a group) a 1-page **abstract** suitable for conference submission
- No paper!
    - Your group's slides/handout and abstract are the final product
    - the idea is that they're then ready to refine for conference submission and presentation (possibly after coding more songs)

In **odd-numbered weeks**, I'll show you what I have in mind by presenting it for my project; then, in even-numbered weeks, it's your turn.

7.2 Some topic ideas to get you started

- Do {stressed syllables, schwas, non-nuclear moras, certain tones, long/short vowels, heavy/light syllables} get set to {stronger/weaker beats, longer/shorter notes, higher/lower notes, more/fewer notes}?
- When do {schwas, glides, vowels that are next to another vowel} get set to their own note vs. when do they share a note with another syllable/vowel?
- When do optional syllables (like French schwa) get set to a note?
- How many {syllables, moras} are in ___ (e.g., English words like *fire*), judging by how they're text-set?

- What rhymes, and how often? Which parts of a syllable count for rhyme?
    - This could give evidence about, e.g., whether a glide is part of an onset or a nucleus
- In a particular case, does text-setting reflect the underlying form or the surface form?
    - E.g., is text-setting of Mandarin Chinese lyrics better modeled as being sensitive to underlying lexical tones or as being sensitive to surface tones (after tone sandhi)
    - E.g., if text-setting in a language is sensitive to syllable weight, is it syllable weight before or after word-final consonants have been resyllabified as onsets (if this happens in the language)?
- For any of the above, has it changed over time? This may require too much data for 1 quarter though
- Sociophonetics of anything, but in songs
    - Ideally, there is some reason for looking at a certain variable in songs rather than (or in addition to) speech!
    - See the sociophonetics readings in the syllabus for how other researchers found songs to be specifically informative

7.3 Groups

- Each group should contain…
    - At least one person with sufficient proficiency or knowledge of the target language
    - At least one person who can do any needed computing & stats
        - Could be elaborate R scripts, could be just Excel—depends on the project
    - If the topic requires it, at least one person who can read music
- These don't have to be three separate people

7.4 How many songs do you need?

- It depends on the data density
- In (Zuraw & Roca in press), almost every syllable was a data point, and we were fine with 19 songs
- In me and Suzy Ahn's K-pop study in progress, every word is a data point, and we have clear results already at 9 songs
    - But we also have a research question for which every *sung (non-rapped) line* is a data point, so we still need to code more songs to answer that one
- In my project (see below), it looks like each line will contain on average one data point, so I will need more songs. Maybe 40?
    - But! I only need to code the crucial spots—not create a full representation of the sheet music—so each song will be pretty fast to process

7.5 Do you need to know any music theory your project, or for this class?

No! I'll introduce a few bits of very basic music theory (like, stronger vs. weaker beats) as needed

7.6 Resources for your project

7.6.1 Where to listen to songs

- You can avoid the **environmental costs of streaming** by using CDs and records that you already own or can borrow, and digital files that reside on your device
    - Used CDs and records: a close second (still require shipping or transportation, unless you were passing by a record store anyway)
    - The **UCLA Music Library**: in-person and online access to sheet music and recordings
- Of course this won't work for all projects, and I don't want you to spend money. What about streaming services like YouTube or Spotify?
    - Consider downloading a recording if you'll need to listen to it to multiple times
    - Consider **who gets the money** from your subscription or from ads
        - E.g., if using YouTube, you can choose an artist's official channel
- How do you like to listen, and what factors do you consider?
- In any case, **use headphones or earbuds** for better sound quality

7.6.2 Where to get sheet music—if your project needs it

- I've used the site **Musicnotes** for high-quality, licensed sheet music
- For Tagalog/Filipino songs, Musicnotes didn't have enough, and I had to use user-created sheet music at **MuseScore.com** (not to be confused with MuseScore.org). These really varied in quality and probably do not send revenue to the rights-holders
- Look for language- or genre- specific sources
    - Tagalog/Filipino: Aldy Santos's website
    - Korean: Akbobada

7.6.3 Where to get lyrics

- These days, a lot of lyrics are already floating around on the web. Just google the title and artists
- If you own a physical copy, the liner notes may include lyrics

7.6.4 Computational and corpus resources—let me know what else you find!

For some of these, you have to write to request access. And, you probably have to read the paper to understand how to use the data.

- Smule's DAMP-VSEP and DAMP-MVP corpora (Smule, Inc. 2018a; Smule, Inc. 2018b)
    - Amateur mobile-phone karaoke performances
    - DAMP-VSEP: 36 languages, 6K singers, 11K different songs
    - DAMP-MVP: Just the most popular singers and songs
- The DALI corpus (Meseguer-Brocal, Cohen-Hadria & Peeters 2019; Meseguer-Brocal, Cohen-Hadria & Peeters 2020)
    - 32 languages, 7K songs, lyrics aligned to raw audio
    - annotated for melody, lyrics, voiceless phonemes

- The Vocadito corpus (Bittner et al. 2021)
    - 40 short songs excerpts, 7 languages, volunteer amateur singers
- MIR-1K dataset (Hsu & Jang 2010)
    - 1000 clips from Chinese pop songs, sung karaoke-style by the lab members
- Musical Corpus of Flow, or MCFlow (Condit-Schultz 2016):
    - 374 verses from 124 English rap songs, 68 different rappers
    - Richly coded for rhythm, phonological and syntactic info, rhymes
    - See the paper for all kinds of plots based on the corpus
    - github.com/Computational-Cognitive-Musicology-Lab/MCFlow
- (Katz 2017) : English rap rhyme corpus available in the paper's supplementary material[5]
    - Refreshingly, it is a plain-text file with 8 columns, easy to download and use
- RhymeAnalyzer software, designed for English rap lyrics (Hirjee & Brown 2010). Available at sourceforge.net/projects/rhymeanalyzer

8 Presenting my project topic: Spanish hiatus resolution

- Next week, you'll make similar presentations
- But, I cheated and have been thinking about this for more than a week!
    - Your presentations next week might not be this detailed

8.1 The phenomenon: hiatus resolution in singing

- *Sinalefa* (apparently, "synalepha" in English): when one word ends in a vowel and the next starts with a vowel, typically in Spanish-language poetry the two vowels count as only one syllable
    - Here's a line of poetry that is supposed to count as 11 syllables (Wikipedia example from poet Garcilaso de la Vega):

*Los ca-be-llos qu**e a**l o-r**o o**s-cu-re- cí- an*
1 2 3 4 **5** 6 **7** 8 9 10 11

- And in songs, the two vowels get smooshed into one note—but not always
    - Listen to this from a Julieta Venegas song

Porque no
Supist**e e**ntender a mi corazón ← smooshed into one note
Lo qu**e ha**bí**a e**n él, porque no ← 2 separate notes, in both cases
Tuvist**e e**l valor de ver quién soy ← smooshed

Porque no
Escuchas lo qu**e e**stá tan cerca de ti ← smooshed
Sól**o e**l ruido d**e a**fuer**a y** yo ←not smooshed, smooshed, not smooshed
Qu**e e**stoy **a u**n lado, desaparezco para ti ← both smooshed

[5] kb.osu.edu/items/498d1e62-759b-533b-9e9b-7eccde20e0b9

8.1.1 What is already known/claimed about sinalefa in Spanish?

- In poetry, can depend on which vowels are involved, stress (Esgueva Martínez 1998, 2004); position in the line (Espinosa 1925)
- It happens in speech too, where it can depend on speech rate, which vowels are involved, stress, morphological structure, collocation frequency—and all this can vary by variety of Spanish (see Souza 2010's literature review)

8.1.2 Why look at this in song?

- I've observed from students' course projects that it's hard to look at/listen to a recording of speech and decide whether two vowels are sharing a syllable
  - Because of course, "syllable boundary" is not a phonetic property
  - Rather, it's the result of an analysis of how (invisible/inaudible) syllable structure shapes phonetic cues and phonological behavior
  - See (Herrero de Haro & Alcoholado Feltstrom 2024) for a phonetic study
- In songs, you get an overt signal about what syllabification the singer/composer had in mind

8.2 The corpus: Julieta Venegas[6]

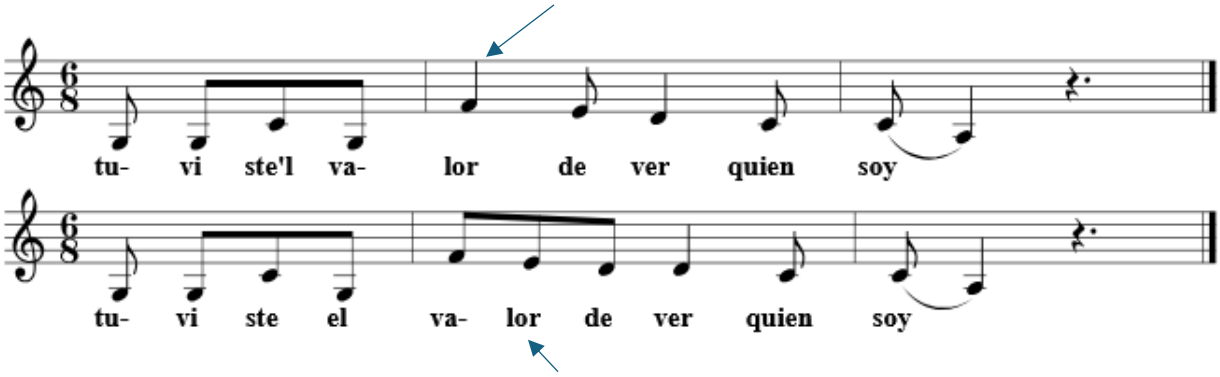
- Corpus: Songs by Julieta Venegas
  - Singer-songwriter
  - US-born but grew up in Mexico
  - Active since late 1990s
  - Rock, pop, pop-inflected ranchera, and more
- Why Julieta Venegas?
  - She writes her own songs → don't have to worry about complications of songwriter's intent vs. singer's interpretation, or different songwriters on different songs
  - Has recorded several albums → plenty of material
  - I like her music ← this is important, since I'll be listening to the music a lot!

8.3 Plans

- Download lyrics (won't need sheet music)
- Highlight the vowel-vowel sites
- Listen and mark sinalefa vs. hiatus, with or without glottal stop (or h)
- Enter into a spreadsheet and code for vowel quality, stress, maybe syntactic boundary
- See what effects these have. Do claimed effects in speech hold?
  - To clarify: *given* a certain line of text and a certain melody, a text-setter could be forced or strongly encouraged into either sinalefa or hiatus

[6] es.wikipedia.org/wiki/Julieta_Venegas#/media/Archivo:Nobel_Peace_Prize_Concert_2008_Julieta_Venegas2.jpg

real, with sinalefa of *ste+el*—good because the stressed second syllable of *va-LOR* is on the strongest beat type, the "downbeat"



[7]

fake with hiatus on *ste+el*—bad because the stressed second syllable of *va-LOR* is now forced onto a weak beat

- Maybe I'll do a constraint-conflict analysis later of stress vs. sinalefa!
- But for now, I just want to see whether the factors I'm looking at (vowel quality, etc.), make it more like for a songwriter to write a line like this in the first place, where *ste+el* will have to get smooshed onto one note

9 Depending on how much time we have, I'd like to briefly present a past project and an ongoing one (will use slides)

- OPM text-setting as evidence for Tagalog/Filipino stress
- Text-setting in K-pop

10 What to do for next week

- ☐ Get access to BruinLearn page, if not enrolled in course
- ☐ Read this week's 4 papers, on BruinLearn
  - That's not as much as it sounds like! Excluding references and appendices…
    - McPherson: 11 pages
    - Starr & Shih: 29 pages
    - Tan & al: 17 pages
  - And, this literature has lots of figures 😊
  - Be ready with your "1 positive thing" and "1-2 items for discussion" for each paper. E.g.,
    - What was the authors' evidence for their conclusion X?
    - What are the implications of this study for Y?
    - How could this study's methods be applied to Z?

[7] I used composing.studio to make this. Here's the link to this example if you want to play with the notation: composing.studio/tedious-slope-6382

        - Something you didn't understand
        - Something you disagreed with
        - Something you'd never heard before that really resonated for you
        - A new perspective you have on something you were already familiar with, because of this reading
- ☐ Make groups
- ☐ Choose a topic!
- ☐ Be ready to informally present project topic
    - Tell us the research question
    - How close has this question come to being answered already?
        - Were you able to find research on the same phenomenon in a different language?
        - Were you able to find other research on music in this language? (If the language is, say, English, you can make this step more specific: e.g., is there already research on open vs. closed syllables in English-language music)
    - Let us listen to part of an example song
    - Show us a piece of sheet music or lyrics, as applicable—how much could you find?
    - Say what you're planning to code for

11 Time for you to discuss possible topic ideas

12 References

Bittner, Rachel M., Katherine Pasalo, Juan José Bosch, Gabriel Meseguer-Brocal & David Rubinstein. 2021. vocadito: A dataset of solo vocals with f0, note, and lyric annotations. arXiv, ms. http://arxiv.org/abs/2110.05580. (5 October, 2022).

Condit-Schultz, Nathaniel. 2016. MCFlow: A Digital Corpus of Rap Transcriptions. *Empirical Musicology Review* 11(2). 124–147. https://doi.org/10.18061/emr.v11i2.4961.

Eisner, Jason. 1997. Efficient generation in primitive Optimality Theory. In *Proceedings of the 35th Annual Meeting of the Association for Computational Linguistics and Eighth Conference of the European Chapter of the Association for Computational Linguistics* (ACL '98/EACL '98), 313–320. USA: Association for Computational Linguistics. https://doi.org/10.3115/976909.979657.

Esgueva Martínez, Manuel A. 1998. La sinalefa en la rítmica. *Epos: Revista de filología* (14). 89–89.

Esgueva Martínez, Manuel Agustín. 2004. Vocales en contacto: la sinalefa. *Rhythmica. Revista Española de Métrica Comparada* (2). 87–108.

Espinosa, Aurelio M. 1925. La Sinalefa entre Versos en la Versificacion Espanola. *Romanic Review* 16(2). 103–121.

Hayes, Bruce. 2009. Faithfulness and componentiality in metrics. In Sharon Inkelas & Kristin Hanson (eds.), *The nature of the word*, 113–148. Cambridge, MA: MIT Press.

Herrero de Haro, Alfredo & Antonio Alcoholado Feltstrom. 2024. Anti-hiatus tendencies in Spanish: rate of occurrence and phonetic identification. *Linguistics*. De Gruyter Mouton 62(1). 203–228. https://doi.org/10.1515/ling-2021-0228.

Hirjee, Hussein & Daniel G. Brown. 2010. Rhyme analyzer: An analysis tool for rap lyrics. In *Proceedings of the 11th International Society for Music Information Retrieval Conference*, vol. 160, 161. https://ismir2010.ismir.net/proceedings/late-breaking-demo-23.pdf. (11 March, 2025).

Hsu, Chao-Ling & Jyh-Shing Roger Jang. 2010. On the Improvement of Singing Voice Separation for Monaural Recordings Using the MIR-1K Dataset. *IEEE Transactions on Audio, Speech, and Language Processing* 18(2). 310–319.

Katz, Jonah. 2017. Style and Flow: A Commentary on Duinker & Martin. *Empirical Musicology Review* 12(1–2). 101–108. https://doi.org/10.18061/emr.v12i1-2.5926.

Kawahara, Shigeto, Atsushi Noto & Gakuji Kumagai. 2018. Sound Symbolic Patterns in Pokémon Names. *Phonetica*. De Gruyter Mouton 75(3). 219–244. https://doi.org/10.1159/000484938.

Liu, Jin, Dong ,Hongyuan, Yuan ,Jiahong, Ma ,Haosong & Amanda and She. 2023. Linguistic tone in Chinese rap: an interdisciplinary approach. *Journal of New Music Research*. Routledge 52(4). 265–284. https://doi.org/10.1080/09298215.2024.2329075.

Martin, Andrew Thomas. 2007. *The evolving lexicon*. University of California, Los Angeles PhD dissertation.

Meseguer-Brocal, Gabriel, Alice Cohen-Hadria & Geoffroy Peeters. 2019. Dali: A large dataset of synchronized audio, lyrics and notes, automatically created using teacher-student machine learning paradigm. *arXiv preprint arXiv:1906.10606*.

Meseguer-Brocal, Gabriel, Alice Cohen-Hadria & Geoffroy Peeters. 2020. Creating DALI, a Large Dataset of Synchronized Audio, Lyrics, and Notes. *Transactions of the International Society for Music Information Retrieval* 3(1). https://doi.org/10.5334/tismir.30.

Prince, Alan & Paul Smolensky. 1997. Optimality: From Neural Networks to Universal Grammar. *Science*. American Association for the Advancement of Science 275(5306). 1604–1610. https://doi.org/10.1126/science.275.5306.1604.

Shih, Stephanie. 2012. Linguistic determinants in English personal name choice. Presentation presented at the LSA annual meeting, Portland, OR.

Smule, Inc. 2018a. DAMP-VSEP: Digital Archive of Mobile Performances - Vocal Separation. Zenodo. http://doi.org/10.5281/zenodo.3553059.

Smule, Inc. 2018b. DAMP-MVP: Digital Archive of Mobile Performances - Smule Multilingual Vocal Performance. Zenodo. http://doi.org/10.5281/zenodo.2747436.

Soranno, Patricia A. 2010. Improving Student Discussions in Graduate and Undergraduate Courses: Transforming the Discussion Leader. *Journal of Natural Resources and Life Sciences Education* 39(1). 84–91. https://doi.org/10.4195/jnrlse.2009.0019g.

Souza, Benjamin J. 2010. *Hiatus Resolution in Spanish: An Experimental Study - Blacklight*. Pennsylvania State University PhD dissertation. https://etda.libraries.psu.edu/catalog/10793. (24 March, 2025).

Zuraw, Kie & Paolo Roca. in press. Evidence for stress in Filipino text-setting. *Phonology*.