

Populating the map of British Columbia English

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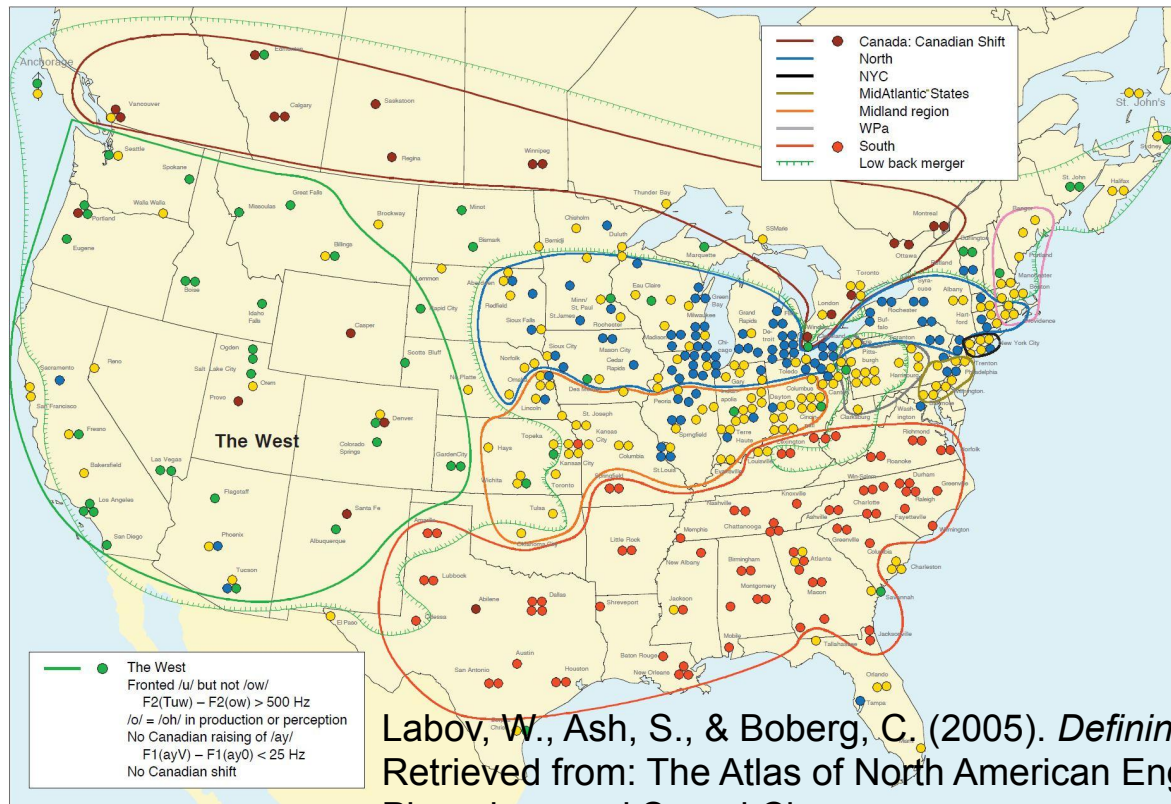
Acknowledgments

- We are on the traditional, ancestral, and unceded territory of the Musqueam people.
- Kate Curtis (UBC Linguistics) and Robert Pederson (UBC Music)
- Funders: University of British Columbia Faculty of Arts, SSHRC Award #F18-00473
- The speakers who donated their voices to the study.

Why English? It provides a wide net.

- BC is very multilingual
 - Panjabi/Punjabi, Cantonese, Chinese (unspecified), and Mandarin (Statistics Canada, 2012).
- BC is home to over 34 First Nations languages (Gessner et al., 2014).
 - Innovative language patterns found in First Nations and American Indian communities, shaped by heritage languages and cultural connections (Ball & Bernhardt, 2008; Cogshall, 2008; Newmark et al., 2016).
- Nearly 97% of BC residents know English.

Homogeneity of Canadian English

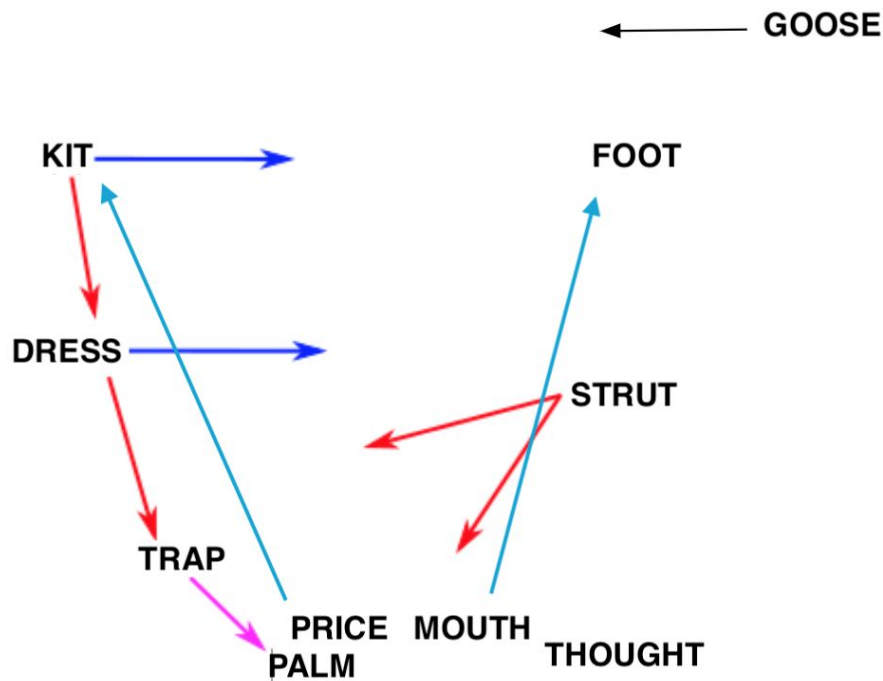


Labov, W., Ash, S., & Boberg, C. (2005). *Defining the West*.

Retrieved from: The Atlas of North American English: Phonetics, Phonology and Sound Change.

Some National Trends

- Canadian Shift, GOOSE-fronting, Canadian Raising (e.g., Clarke et al., 1995; Boberg, 2008, 2010; Labov et al., 2008).



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<https://commons.wikimedia.org/w/index.php?curid=42013414>, plus a modification.

BC English: PRICE and MOUTH

- Lower rates of Canadian Raising compared to other provinces (e.g., Boberg, 2008, 2010).
- Vancouver teenagers do less Canadian Raising with PRICE than adults (Sadlier-Brown, 2012).
- Vancouver adults Canadian Raise equivalently (Sadlier-Brown, 2012) or more (Swan, 2016) than Washington adults.

BC English: TRAP, BAG, EGG

- TRAP retraction has been documented in Vancouver for decades (Esling & Warkentyne, 1993).
- Mellesmoen (2016)
 - TRAP and BAN are retracting in apparent time
 - BAG is raising in apparent time
- Mellesmoen (2018)
 - BAG and PLAGUE are merging, and are distinct from EGG.

Homogeneity of the sample

- Small samples (exception is Mellesmoen's work) that are typically urban, middle class, native speakers of English (de Wolf et al., 2004; Boberg, 2008, 2010; Chambers, 1998).
- Chambers (1998): urban middle class individuals who are Anglophone, and whose predecessors have lived in Canada for minimally two generations.
- Dollinger and Clarke (2012) note that there is a particular lack of research on Canadian English as spoken in rural communities, and those far to the north.

- While the work on Canadian English has been careful, is it a realistic sample of today's Canada?
- Does it allow us to answer the question of what English is like in British Columbia?

Goal of our project

- Collect speech samples from individuals across the province, gathering data from a larger and more diverse sample than what we might get in a typical university-based study.
- This project is driven by a simple empirical question: what do British Columbians sound like?

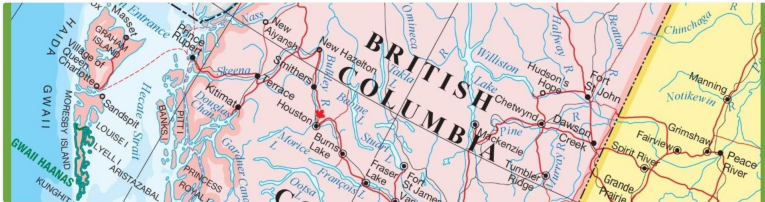
<https://drawl.linguistics.ubc.ca/>

Launched a website where participants read a story and complete a demographic questionnaire.

DRAWL: Determining Regional Accents With Literature

A UBC Linguistics and UBC School of Music project

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The Story

Please note: This site may not be available from 2:00 a.m. to 2:05 a.m. Pacific time.
Before recording this story, you must complete the [Reader Registration](#) page.

There are now **two ways** of submitting a recording to the DRAWL project. Whichever you choose, please record in a quiet setting: a busy coffee shop or a room with music playing in the

RECENT POSTS

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Methods

- Recorded story (604 items)
 - *Vancouver Down* excerpts: Mike rolled out of his cot, glanced over at Danny sleeping on the floor, and then staggered down the hall to the kitchen. His head was still thick from last night's beer. The sink had bits of pasta and eggshell in it, and part of an old bagel. Dumping a tin of beans in a pan to heat, he rolled a cigarette, then stared out the window...
- Transcribed orthographically and force-aligned using the MFA (McAuliffe et al., 2017).
- An analysis of 20 hand-corrected files determined that time investment did not substantially improve acoustic estimates.

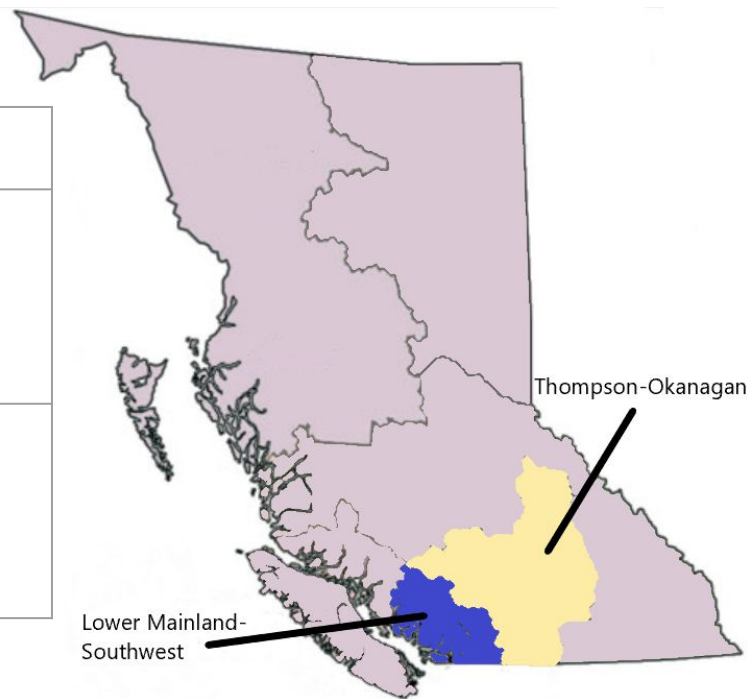
Data to date

- 176 usable recordings have been submitted from:
 - Cariboo-Chilcotin-Coast: 4
 - Kootenay-Rockies: 3
 - Lower Mainland: 56
 - Thompson-Okanagan: 93
 - Peace-Northeast: 2
 - Skeena-North Coast: 2
 - Vancouver Island: 16
- We need more! Please visit <https://drawl.linguistics.ubc.ca/> to contribute your voice.

Today's data

- We'll focus on comparing Okanagan and Lower Mainland speakers.
- Location categorized by longest geographical residence

	Lower Mainland	Okanagan
<i>Female</i>	40 (ages 19 - 65, mean = 41, median = 38)	67 (ages 14 - 77, mean = 39, median = 35)
<i>Male</i>	16 (ages 18 - 69, mean = 41, median = 37)	26 (ages 18 - 78, mean = 40, median = 33)



Analysis Methods

- Acoustic estimates were made in emuR, an R Package(Winkelmann, 2019).
- Using F1/F2 trajectory with 5 ms window shift
 - Underlyingly using R wrassp package forest function
 - Window type = Blackman (default)
- Females and males are analyzed separately to avoid normalization decisions.
 - Female setting: effective window length = 12.5 ms; nominal F1 = 560 Hz
 - Male setting: nominal F1 = 500 Hz

Today's research question

**Is there a difference between the Okanagan and
Lower Mainland speakers?**

Is there a difference?

- Front vowels involved in the Canadian Shift
 - KIT, DRESS, TRAP
- Pre-velar raising (/g/)
 - DRESS (EGG), TRAP (BAG)
- Canadian raising
 - PRICE
 - Not MOUTH because not many tokens
- Our focus is on testing whether there is a difference using *Generalized Additive Mixed Models*, which will be presented visually.

Methods: What are GAMMs?

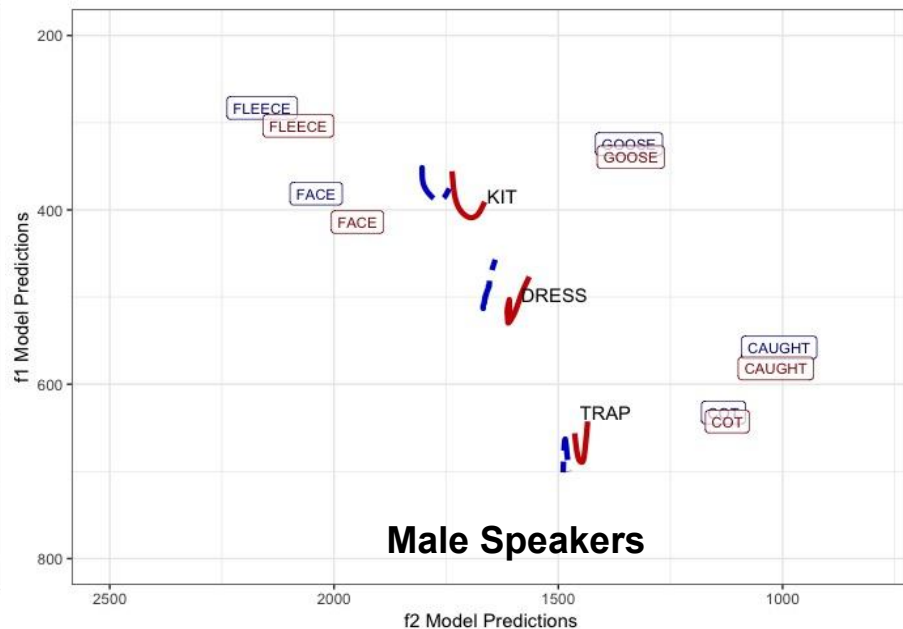
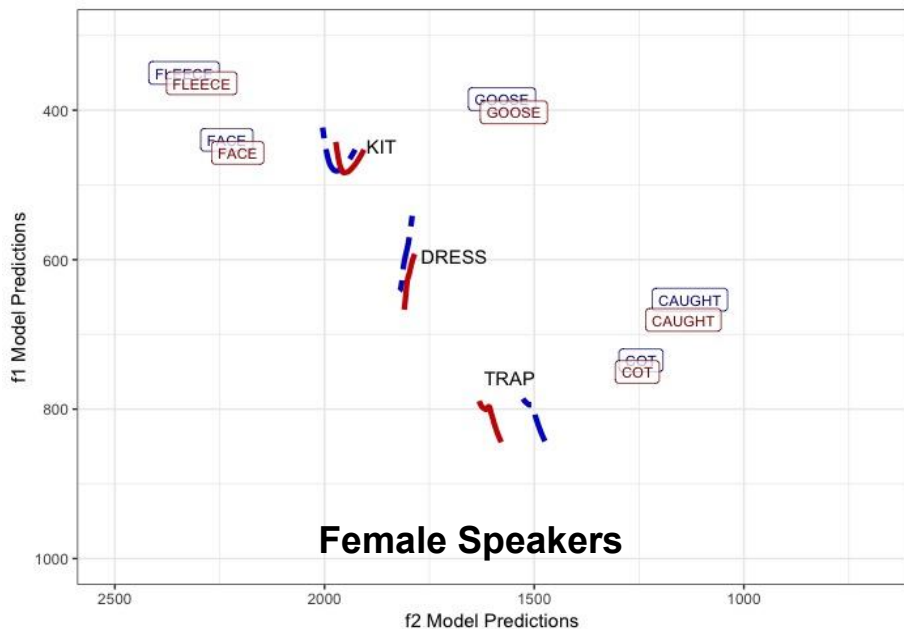
- Generalised Additive Mixed Models
 - Frequentist statistical modelling technique
 - Account for shape of vowel trajectories
 - More principled way of fitting models for data with non-linearities
 - Compared to polynomials in Linear Regression Model
- Separate models for females F1, F2 and males F1, F2
 - Target vowels (TRAP, DRESS, KIT, PRICE): location, age, phonological environment, random smooths for speaker
- Model comparisons
- Tutorials for GAMMs: (Soskuthy, 2017; <https://arxiv.org/abs/1703.05339>)

Results: Canadian Shift

Okanagan is more advanced in the Canadian Shift than Lower Mainland, except TRAP for females, where Lower Mainland is more advanced

— • — Lower Mainland

— Okanagan



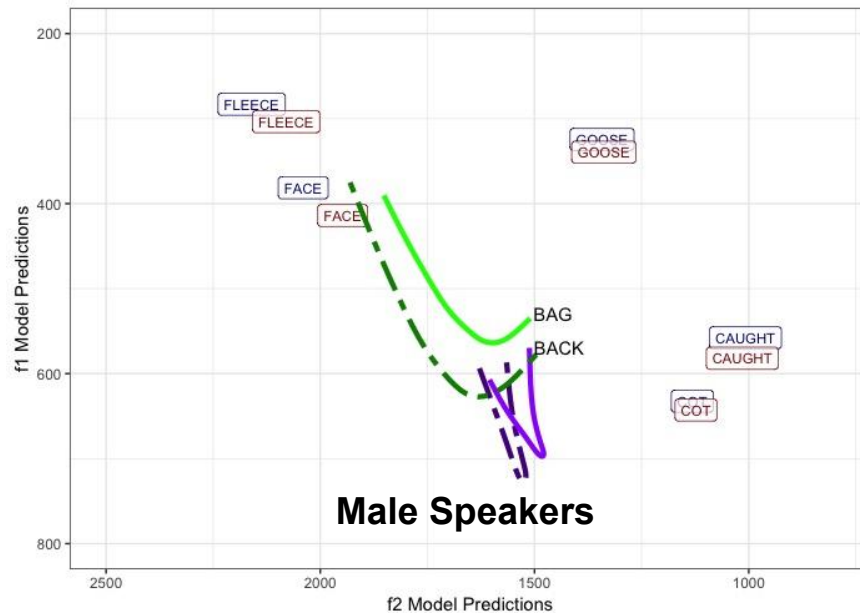
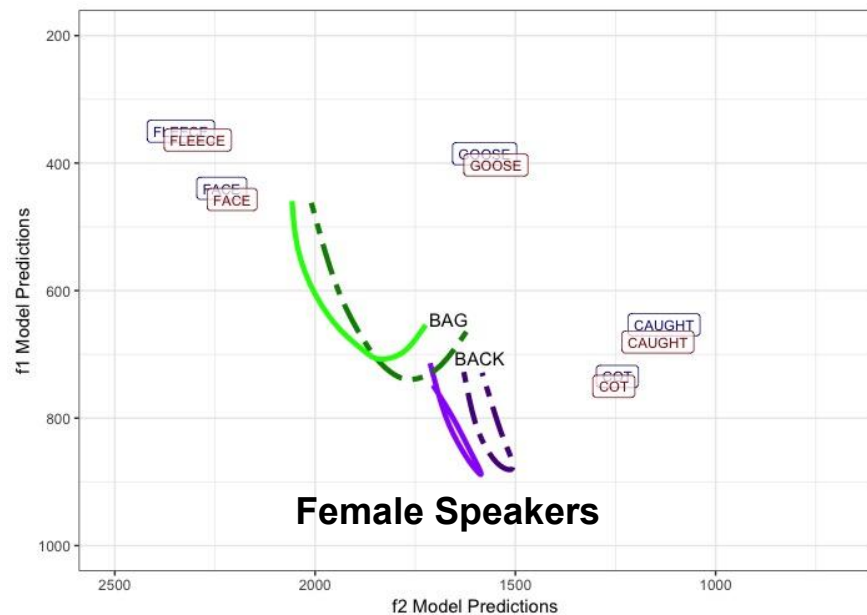
Results: Pre-velar Raising

Okanagan and Lower Mainland show differences in pre-velar raising of TRAP

 Before voiced velars
 Before voiceless velars

 Lower Mainland

 Okanagan



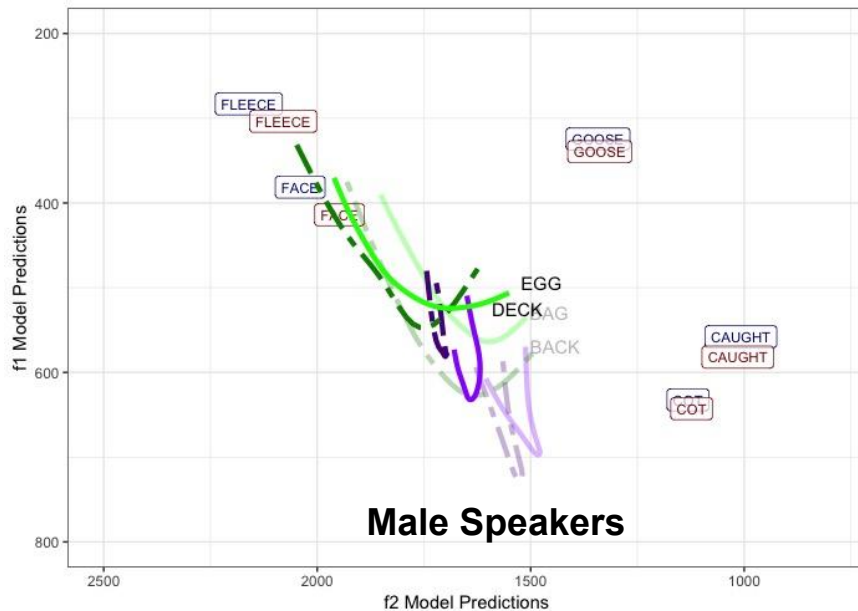
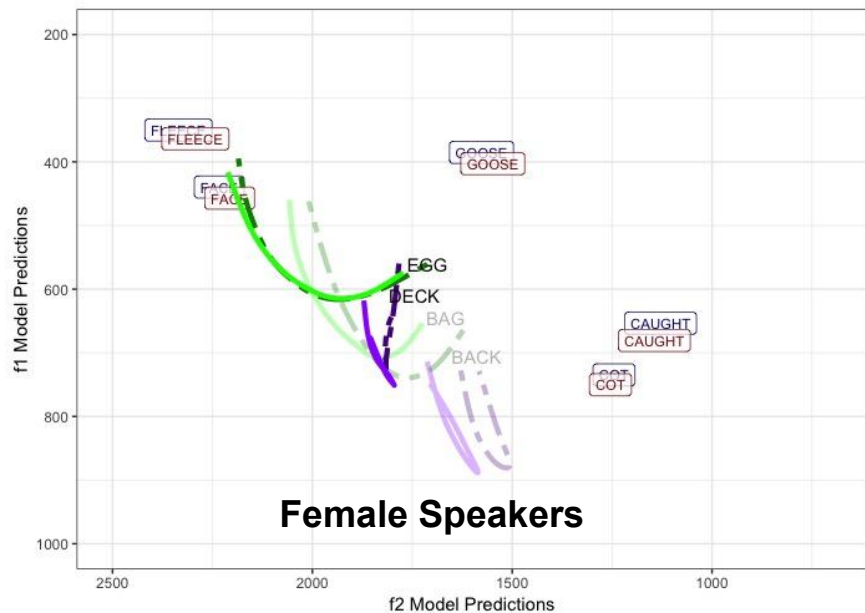
Results: Pre-velar Raising

Okanagan and Lower Mainland show differences in pre-velar raising of DRESS

■ Before voiced velars
■ Before voiceless velars

— • — Lower Mainland

— Okanagan



Results: Canadian Raising

Lower Mainland has more advanced Canadian Raising than the Okanagan



Before voiced stops



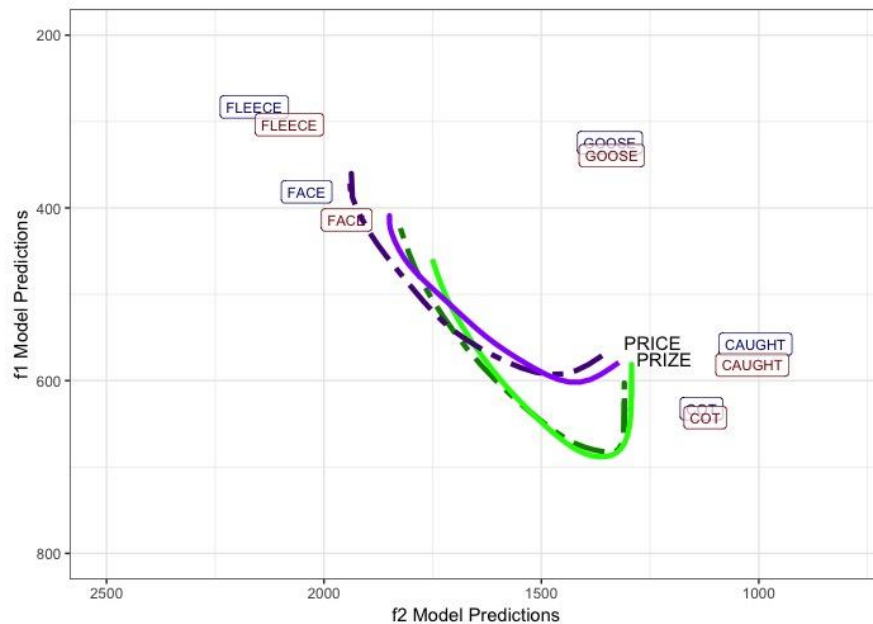
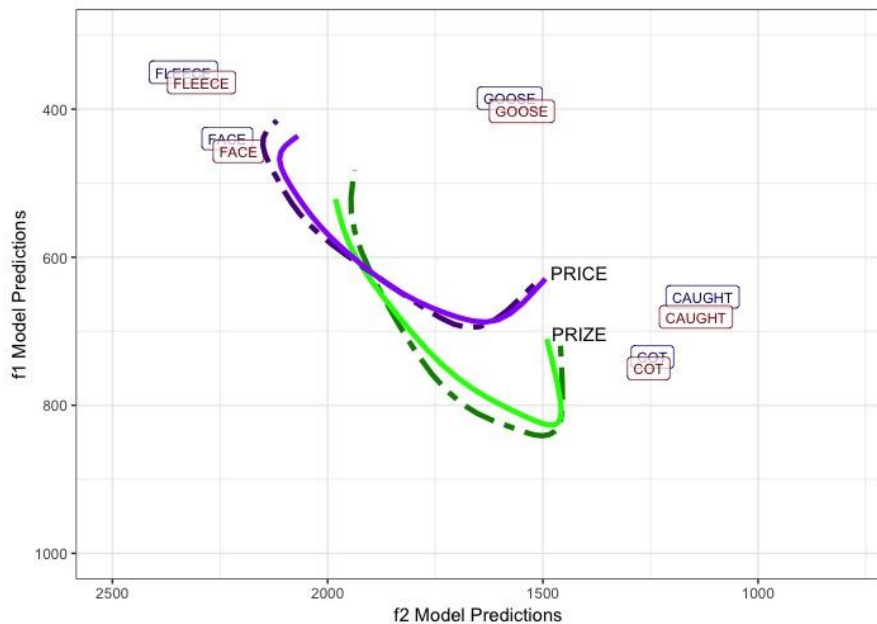
Before voiceless stops



Lower Mainland



Okanagan



Discussion

- Regional differences are found
 - 10 of 16 GAMM models were improved with the inclusion of location
- One location is not consistently more conservative than another
 - Lower Mainland is more advanced in one national trend: Canadian Raising
 - Okanagan is more advanced in the other national trend: Canadian Shift
- May coincide with salience/stereotyping of features
 - Lower Mainland is more advanced in the stereotyped feature: Canadian Raising
 - Okanagan is more advanced in the non-stereotyped features: Canadian Shift
- Certain features don't appear to be more conservative in either region
 - Difference between Lower Mainland and Okanagan in pre-velar raising, but neither are obviously more advanced
 - Pre-velar raising is realised in different ways: raising vs diphthongisation

Conclusions

- Other factors may be relevant, of course!
 - Mobility between Lower Mainland and Okanagan speakers.
 - Age (We know this is significant; e.g., Mellesmoen 2016, 2018 for relevant age differences.)
 - Language contact, community history and demographics.
- **Methodological note:** To capture differences we need sensitive measures.
 - GAMMs were used to capture differences across vowel duration.

Take home point

**Is there a difference between the Okanagan and
Lower Mainland speakers?**

Yes.

Thank you for listening!

<https://drawl.linguistics.ubc.ca/>

Extras

Reader Registration

Please note: This site will not be available from 2:00 a.m. to 2:05 a.m. Pacific time.

You only need to register once for this project. Once you have submitted the data on this page by pushing the submit button, you can carry out your recording at any time by going to the Story page without filling out this page again.

This project is about discovering different regional dialects in British Columbia. If you chose to participate in this study, you will be asked to read a short story over the phone or through the browser on your computer, in addition to providing some demographic and personal data about your language use and history. We will analyze your speech patterns to better understand the dialect landscape in Western Canada.

This study is being conducted by Dr. Molly Babel and Dr. Bob Pritchard, who are both professors at the University of British Columbia. If you have questions about the study, please contact Molly at molly.babel@ubc.ca or Bob at bob@mail.ubc.ca.

Your participation is entirely voluntary and optional. If you choose to participate in this study, your doing so is confidential and we do not collect identifying information. By agreeing to participate in this study you agree that your audio recording and its associated accent analysis can become part of the project accent database. Your recordings will be edited to be anonymous, and can be used for associated research purposes, either by being shared with other researchers, made publicly available as part of a dataset, or used in the creation of an artistic work exploring different accents.

If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics at [604-822-8598](tel:604-822-8598), or if long distance, email RSIL@ors.ubc.ca or call toll free [1-877-822-8598](tel:1-877-822-8598).

By submitting your registration and a recording you are consenting to participate in this research.

Data entry for reader registration

By filling out the data below and submitting the information, you are consenting to participate in this research.

Name *

First

Last

Email *

Voice Type *

☐ Male

☐ Female

Age *

Select years

Computer System *

Browser *

Primary language spoken in your childhood home *

Search

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Primary language spoken in your childhood community *

Primary language spoken in your adult home *

Primary language spoken in your adult community *

What languages do you use on a daily or weekly basis? Please select at least one *

Daily/weekly language 1

Daily/weekly language 2

Daily/weekly language 3

Number of years you have lived in British Columbia *

Select years

Current BC geographic location *

1 Vancouver Island-Coast
2 Lower Mainland-Southwest
3 Thompson-Okanagan
4 Kootenay-Rockies
5 Cariboo-Chilcotin-Coast
6 Skeena-North Coast
7 Peace-Northeast

In which general geographic location have you lived the longest in B.C. *

In which B.C. city/town/community have you lived the longest? *

How many years in that community? *

Select years

If known, in what country was your mother born?

Choose country

28

If known, in what country was your father born?

Choose country

If known, in what languages were/are your parents fluent? *

Parental language 1

Parental language 2

Parental language 3

Parental language 4

If known, in what country was your maternal grandmother born?

Choose country

If known, in what country was your maternal grandfather born?

Choose country

If known, in what country was your paternal grandmother born?

Choose country

If known, in what country was your paternal grandfather born?

Choose country

If known, in what languages were/are your grandparents fluent?

Grandparents' language 1

Grandparents' language

Grandparents' language

Grandparents' language

What other languages have you studied, and how fluent are you?

Choose language 1

Reading/Writing

- ☐ None
☐ Basic
☐ Moderate
☐ Fluent

Speaking

- ☐ None
☐ Basic
☐ Moderate
☐ Fluent

Listening

- ☐ None
☐ Basic
☐ Moderate
☐ Fluent

Other languages studied?

Choose Language 2

Reading/Writing

- ☐ None
☐ Basic
☐ Moderate
☐ Fluent

Speaking

- ☐ None
☐ Basic
☐ Moderate
☐ Fluent

Listening

- ☐ None
☐ Basic
☐ Moderate
☐ Fluent

Are you active as a singer such as in a choir, band, or soloist? *

- ☐ Yes
☐ No

What singing instruction have you received?

- ☐ School Choir
☐ Community/Church choir
☐ College/University choir
☐ Private vocal training
☐ Professional vocal training
☐ Other

Years of singing instruction

Select years

Address

Street Address

Address Line 2

City

State / Province / Region

ZIP / Postal Code

Country

By pressing the submit button you agree to have your data used for the study of Canadian accents. Upon pressing the button, you will be redirected to the Story page, where you will record yourself reading the on-screen story. Instructions for recording are at the top of the Story page.

Results: “Canadian” Raising (Option1)

Lower Mainland has more robust “Canadian” Raising than the Okanagan



Before voiced stops



Before voiceless stops



Lower Mainland



Okanagan

