



# Phonetic vs. Phonological Considerations in Inter-Generational Vowel Change in Toronto Heritage Cantonese

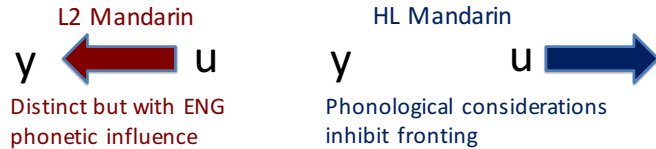
Poster # 13

Language Contact in the Mind and in the Community: Insights from Bilingual Phonetics and Phonology  
 Linguistic Society of America Annual Meeting, January 8, 2016, Washington, DC  
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## 1) Introduction

(H)CAN	(Heritage) Cantonese	HK	Hong Kong
(TO)ENG	(TO)ENG: Toronto English	GTA	Greater Toronto Area
GEN 1	Generation 1 speakers	HL	Heritage Language (acquired as <b>child</b> )
GEN 2	Generation 2 speakers	L2	Second Language (acquired as <b>adult</b> )
EOQ	Ethnic Orientation Questionnaire Scores		

## English-Mandarin Bilingual Speakers compared (Chang et al. 2011)



## 2) Question: What about Toronto HCAN speakers?



## 3) Data



HLVC Project (Nagy 2011)  
 • Sociolinguistic Interviews (~1 hour long)  
 • Ethnic Orientation Questionnaire  
 • Word List (based on picture naming task)



Cantonese is the 2<sup>nd</sup> most widely spoken language in Toronto

## 4) Speaker Information

CAN Background	ENG Background	Demographic Characteristics	Male	Female	Totals
GEN 1 CAN dominant	Variable	Born & raised in HK, 4 lived in GTA for > 20 (ages: 46-62) years	4	5	= 9
GEN 2 Proficient enough for sociolinguistic interview	ENG dominant	Born & raised in GTA (or lived in GTA since age 3)	3 (ages: 21-44)	5 (ages: 16-21)	= 8
			= 7	= 10	N = 17

## 5) Methodology

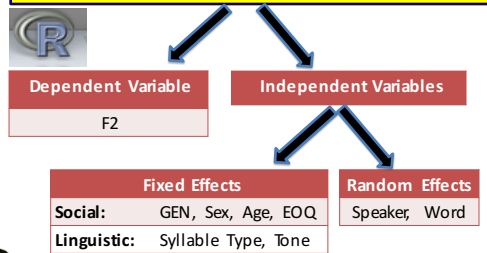
**STEP 1:** F1 and F2 measurements of 6 vowels (/y/, /u/, /i/, /e/, /ɔ/, /a/) across two phonetic contexts (open vs. closed syllable) using PRAAT (Boersma & Weenik 2015)

Vowel	Open Syllable	Closed Syllable	Speaker Totals
/y/	10	5	= 15
/u/	5	10	= 15
	= 15	= 15	N = 30

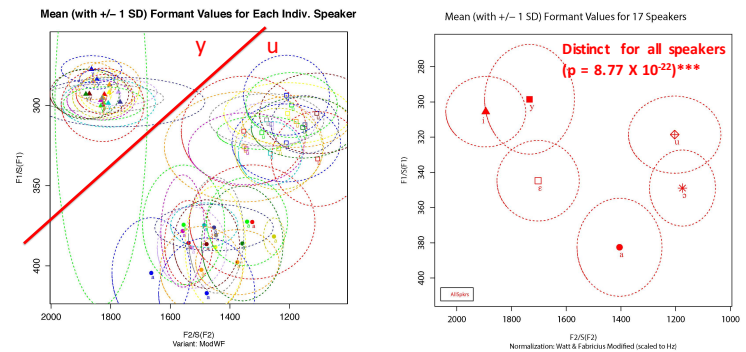
1 7 X 30 = 510 tokens relevant for analysis  
 6 X 510 = 3060 vowel tokens measured

**STEP 2:** Watt & Fabricius Modified Method (Fabricius, Watt, and Johnson 2009) for normalization of 3060 tokens using **NORM** (The Vowel Normalization and Plotting Suite) (Thomas and Kendall 2007)

## STEP 3: Mixed Effects Modeling using R-brul (Johnson 2009)



## 6) Results



Youngest and female speakers most retracted      Youngest speakers most retracted

Sex (p < 0.01)**	Age (p < 0.01)**														
<table border="1"> <tr> <th>Coeff.</th> <th>N</th> <th>Mean (Hz)</th> </tr> <tr> <td>M</td> <td>56.148</td> <td>105</td> <td>1808</td> </tr> <tr> <td>F</td> <td>-56.148</td> <td>150</td> <td>1682</td> </tr> </table>	Coeff.	N	Mean (Hz)	M	56.148	105	1808	F	-56.148	150	1682	<table border="1"> <tr> <th>Coefficient</th> </tr> <tr> <td>+1</td> <td>3.237</td> </tr> </table>	Coefficient	+1	3.237
Coeff.	N	Mean (Hz)													
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## 7) Discussion

- /u/ vs. /y/ contrast maintained for all speakers
- Sex effect found for /y/ only (backing among females)
- Age effect found for both vowels (backing of both among youngest speakers)
- → does not show phonetic assimilation between CAN /u/ and TOENG /u/
- Non-significant factors: GEN, EOQ, Syllable Type, Tone
- Supports findings from Chang et al (2011)
- → HL bilinguals maintain language-internal distinctions

## 8) Next Steps

- Short-Term Goals**
- Measure all 8 monophthongs
  - Larger speaker sample size and more vowel tokens
- Long-Term Goals**
- Compare HCAN and TOENG vowel space using CiC (Contact in the City) data (Hoffman & Walker 2010)
  - Compare Toronto and HK CAN vowel space

## 9) References

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## 10) Acknowledgements

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