



NWAV 45

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# Deconstructing (ING)

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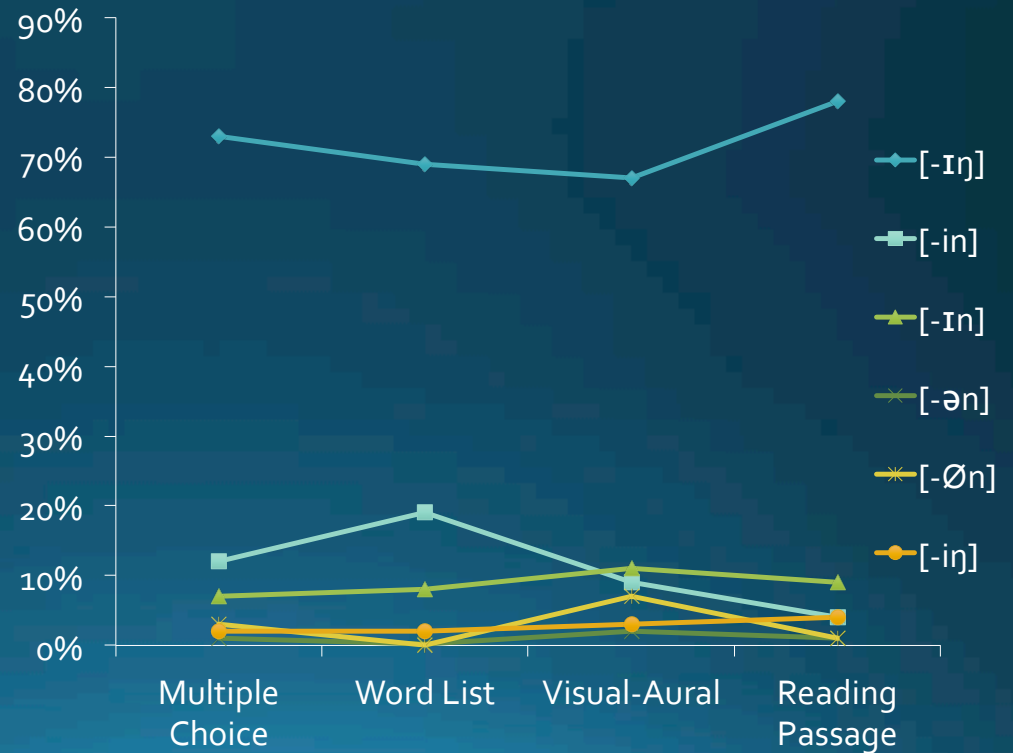
# (ING): Variation in Final Consonant

- Variable realization as velar [ŋ] or alveolar [n]
  - Well studied in both production (e.g. Fischer 1958; Labov 1966; Trudgill 1974 ....) and perception (e.g. Campbell-Kibler 2009 ...)
- Historical convergence (Houston 1985; Labov 1989):
  - Verbal noun *-ingelynge* > *-ing*
  - Participle *-inde* > *-ind* > *-in*
    - Velar variant a hypercorrection or spelling pronunciation (Wells 1982)?
- Occurs in all varieties of English
  - Social constraints (social class, sex/gender, ethnicity ...)
  - Stylistic constraints
  - Linguistic constraints (phonological context, grammatical status)

# (ING): Variation in the Vowel?

- Canadian English:
  - Vancouver (Gregg 1974/1992)  
[ɪŋ], [ɪn], [ɪn], [ən], [n], [iŋ]

- Ottawa (Woods 1979/1999)  
[ɪŋ], [ɪn], [ən]



# (ING): Variation in the Vowel?

- Does (ING) have two variants, or three? (or more?) (e.g. Rosen 2015; Rosen, Ankutowicz & D'Arcy 2016)
- Are the tense-vowel variants on the rise in Canadian English? (e.g. Chambers 2009)
- Is the vowel variation available for social evaluation?

# “Contact in the City”



(Hoffman & Walker 2010)



# Stratification of Informants by Ethnic Origin, Generation and Sex

Ethnic Origin:																		
	British/ Irish		Chinese		Filipino		Greek		Italian		Jewish		Korean		Portuguese		Punjabi	
Gen:	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
1 <sup>st</sup>	8	6	5	4	5	1	4	2	6	4	0	2	1	0	5	1	3	1
2 <sup>nd</sup> /3 <sup>rd</sup>	6	6	11	11	6	6	1	3	9	8	0	1	1	1	4	2	13	13
Total:	14	12	16	15	11	7	5	5	15	12	0	3	2	1	9	3	16	14
Ethnicity Total:	26		31		18		10		29		3		3		12		30	
Grand Total:	162																	

# Extracting and Coding (ING)

- Variable Context
  - Word-final unstressed *-ing*
- Social Factors
  - Speaker
  - Ethnic background
  - Generation
  - Sex/gender
- Linguistic Factors
  - Grammatical status
  - Consonant
    - Velar [ŋ] vs. Apical [n]
    - (“stopped” velar [ŋk], [ŋg])
  - Vowel
    - Lax [ɪ] vs. Tense [i]

Inter-coder  
reliability  
>90%

Inter-coder  
reliability  
<90%



speak[in]



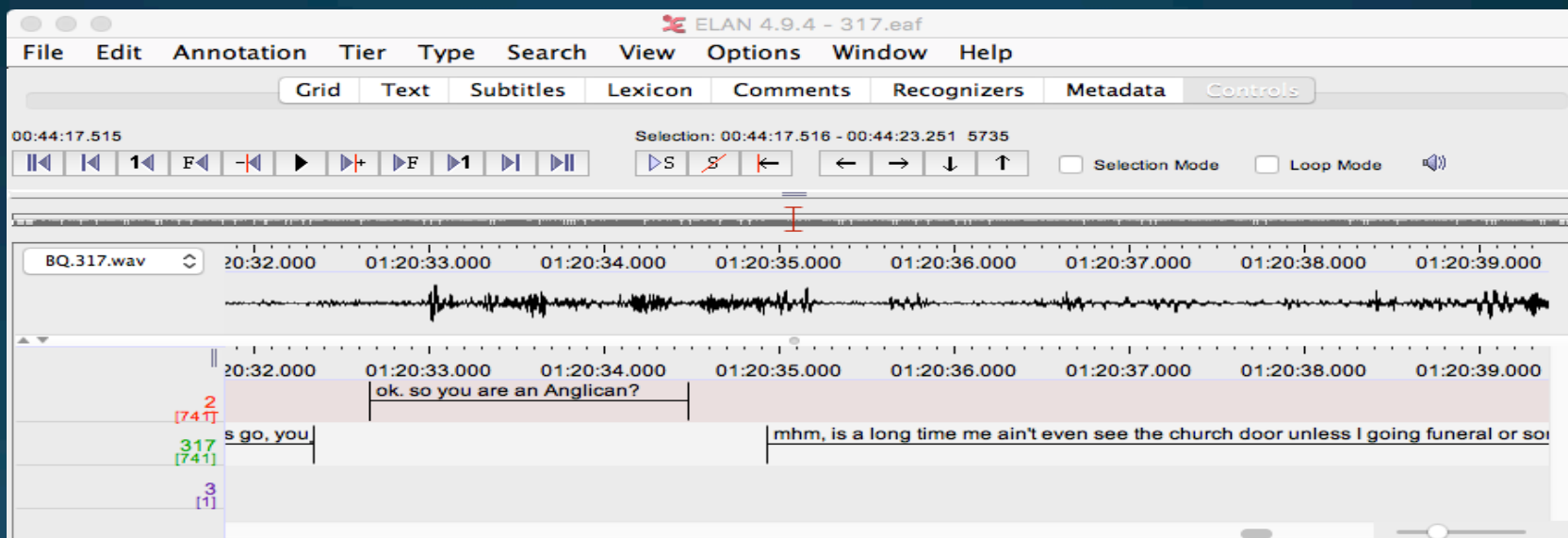
think[iŋ]



shin[iŋg]

# Data Transcription

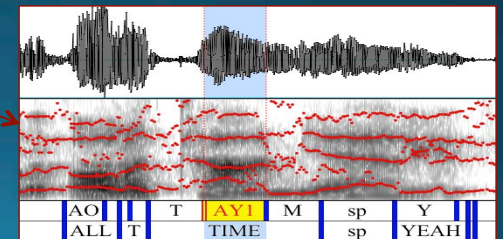
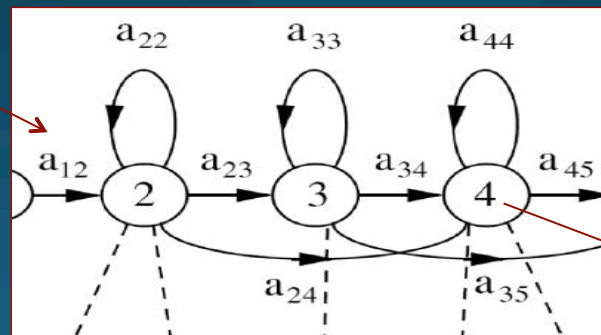
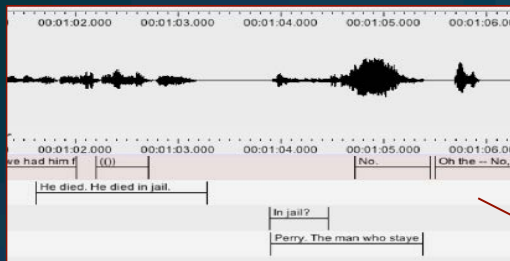
- Time-aligned transcription in ELAN





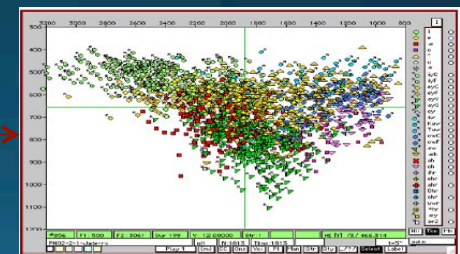
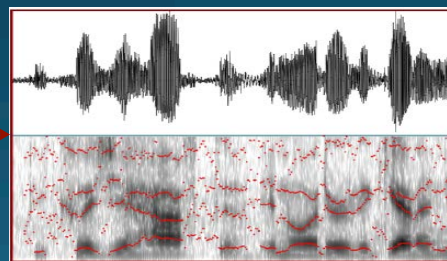
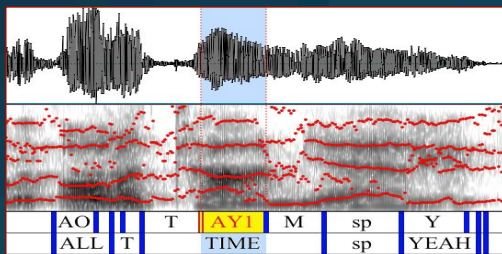
# Extracting Tokens

- Forced alignment with FAVE (Rosenfelder et al. 2011)
  - Force-aligns segments in transcription with wave-form in sound file
  - Produces TextGrid



# Coding Tokens

- Using FAVE-Extract
  - Extracts and measures vowel formants using TextGrid and sound file
  - Normalizes tokens using Lobanov method
  - Locate unstressed final *-ing* and take measurement at 50% point



# Informants Coded for (ING)

## Ethnic Origin:

	British/ Irish		Chinese		Filipino		Greek		Italian		Jewish		Korean		Portuguese		Punjabi			
	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M		
Gen:																				
1 <sup>st</sup>	5	5	3	4					6	2					5	1	1	1		
2 <sup>nd</sup> /3 <sup>rd</sup>	3	2	8	2				1	2	3					4	1	8	9		
Total:	8	7	11	6				1	8	5					9	2	9	10		
Ethnicity Total:	15		17				1		13				11		19					
Grand Total:																			76	5,612 tokens

# Informants Considered in this Study

## Ethnic Origin:

	British/ Irish		Chinese		Filipino		Greek		Italian		Jewish		Korean		Portuguese		Punjabi		
	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	
Gen:																			
1 <sup>st</sup>	5	5																	
2 <sup>nd</sup> /3 <sup>rd</sup>	3	2	8	2					2	3					4	1	8	9	
Total:	8	7	8	2					2	3					4	1	8	9	
Ethnicity Total:	15		10						5						5		17		
Grand Total:									52										4,234 tokens

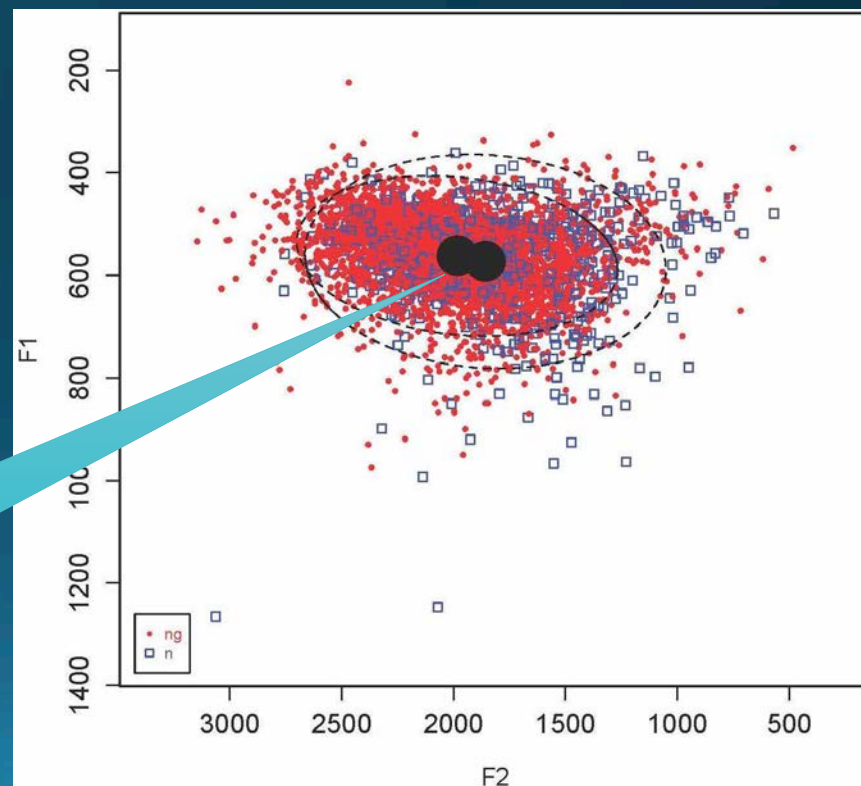
# Overall Distribution of (ING) Tokens

- Plotted with R package *vowels* (Kendall & Thomas 2015)



- High degree of overlap!

But not *complete* overlap of means or standard deviations!



# VRA of F<sub>1</sub> with Rbrul (Johnson 2009)

## 1. Grammatical Status

Preposition	8.363
-thing	5.826
Verbal	0.480
Adjectival	-2.412
Nominal	-3.608

## 3. Sex/Gender x Consonant

Female x Velar	5.38
Male x Apical	5.38
Female x Apical	-5.38
Male x Velar	-5.38

## 2. Ethnic Background (x Generation)

Punjabi (G2)	8.363
Portuguese (G2)	5.826
British/Irish (G2)	0.480
Italian (G2)	-2.412
British/Irish (G1)	-3.608
Chinese (G2)	-8.648

# Conclusions

- Does (ING) have more than two variants?
  - Better viewed as co-variation between the vowel ([ə] ↔ [ɪ] ↔ [i]) and the consonant ([ŋ] ~ [n])
  - Does the vowel variation enter into social evaluation?
- Are the tense-vowel variants unique to Canadian English? (If so, why??)
  - Vowel hasn't received much attention in studies of (ING) in other varieties of English (AFAIK)
  - Place of following consonant may influence perception of preceding vowel
  - More studies!



# Thank you!

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