


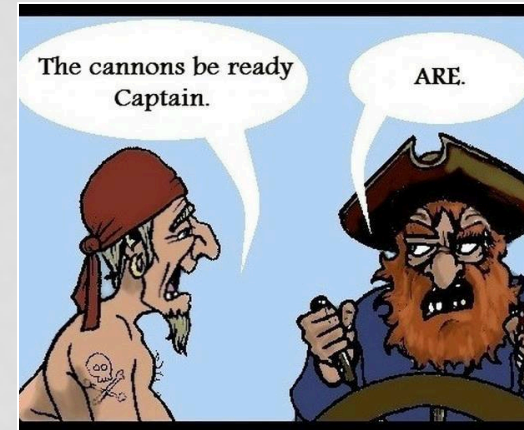
SOCIOLINGUISTICS FOR COMPUTATIONAL SOCIAL SCIENCE



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CANADA**

SOCIOLINGUISTICS

Language in relation to society



- Patterns in language tell us about
 - *Sex, Age, Education, Job type, History, Culture, Place, Etc.*
- Patterns in language tap the norms and practices of people
 - *Communities, Ethnicities, Social groups, Individuals*

SOCIOLINGUISTICS

Language in relation to society



[bʌtə]

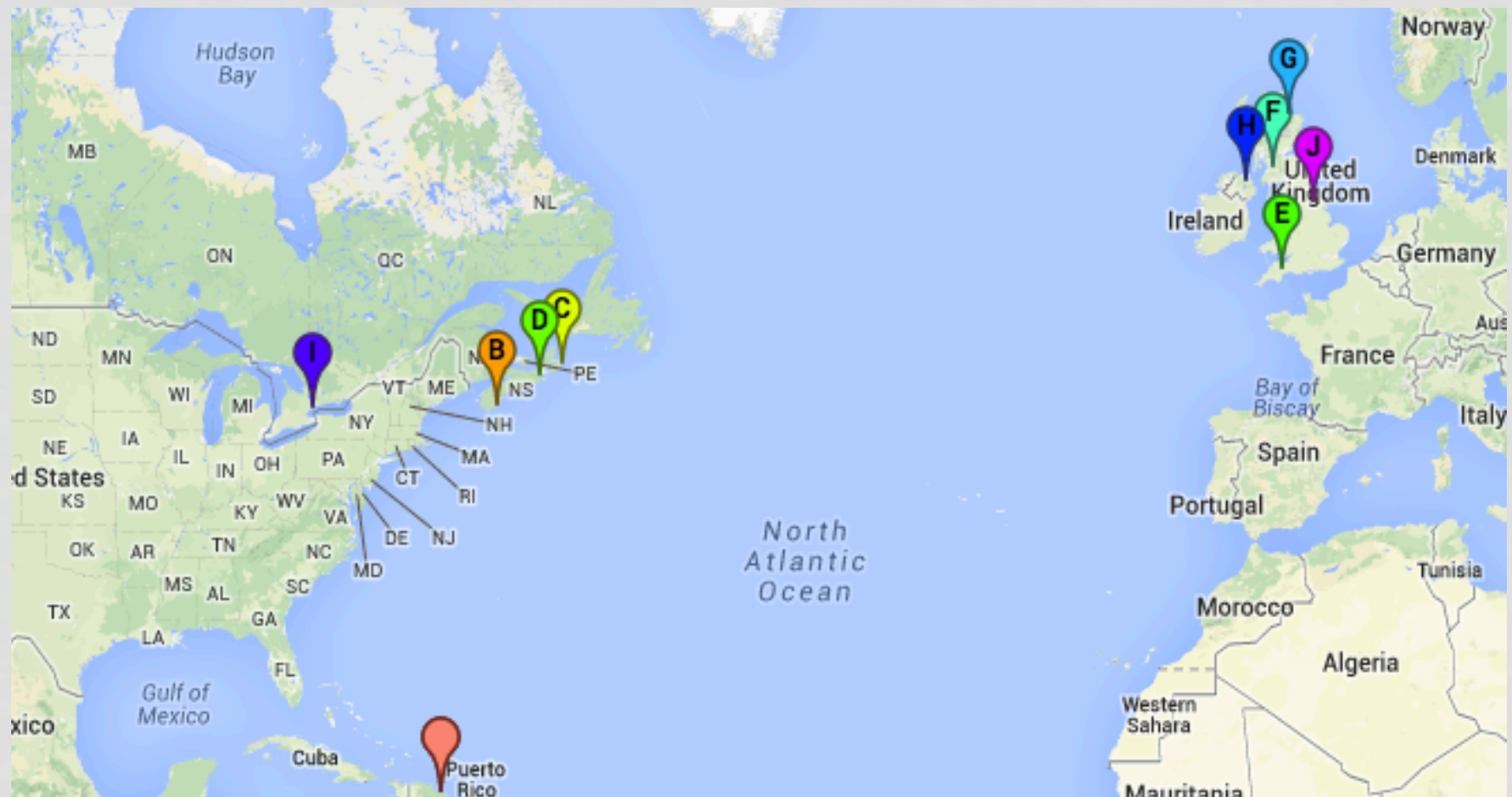
[bʌdr]

[bʌʔə]



- Language is a system
 - universals, variation, intricate patterns
- Language perpetually changes
 - transmission, diffusion, innovation, lifespan
- Language conveys more than just the meaning of the words

SOCIOLINGUISTIC DATA



SOCIOLINGUISTIC CORPORA

UK 1997-2001

	MALE	FEMALE	TOTAL SPEAKER S	TOTAL WORD S
York English Corpus			92	1.2 million
Northwest England <i>Maryport [MPT]</i>	19	22	41	401,376
Lowland Scotland <i>Cumnock [CMK]</i>	18	22	40	346,428
Northern Ireland <i>Culleybacky [CLB]</i>	15	5	20	223,693
Northern Ireland <i>Portavogie [PVG]</i>	7	2	9	92,803
TOTAL	59	51	110	2,264,300

SOCIOLINGUISTIC CORPORA

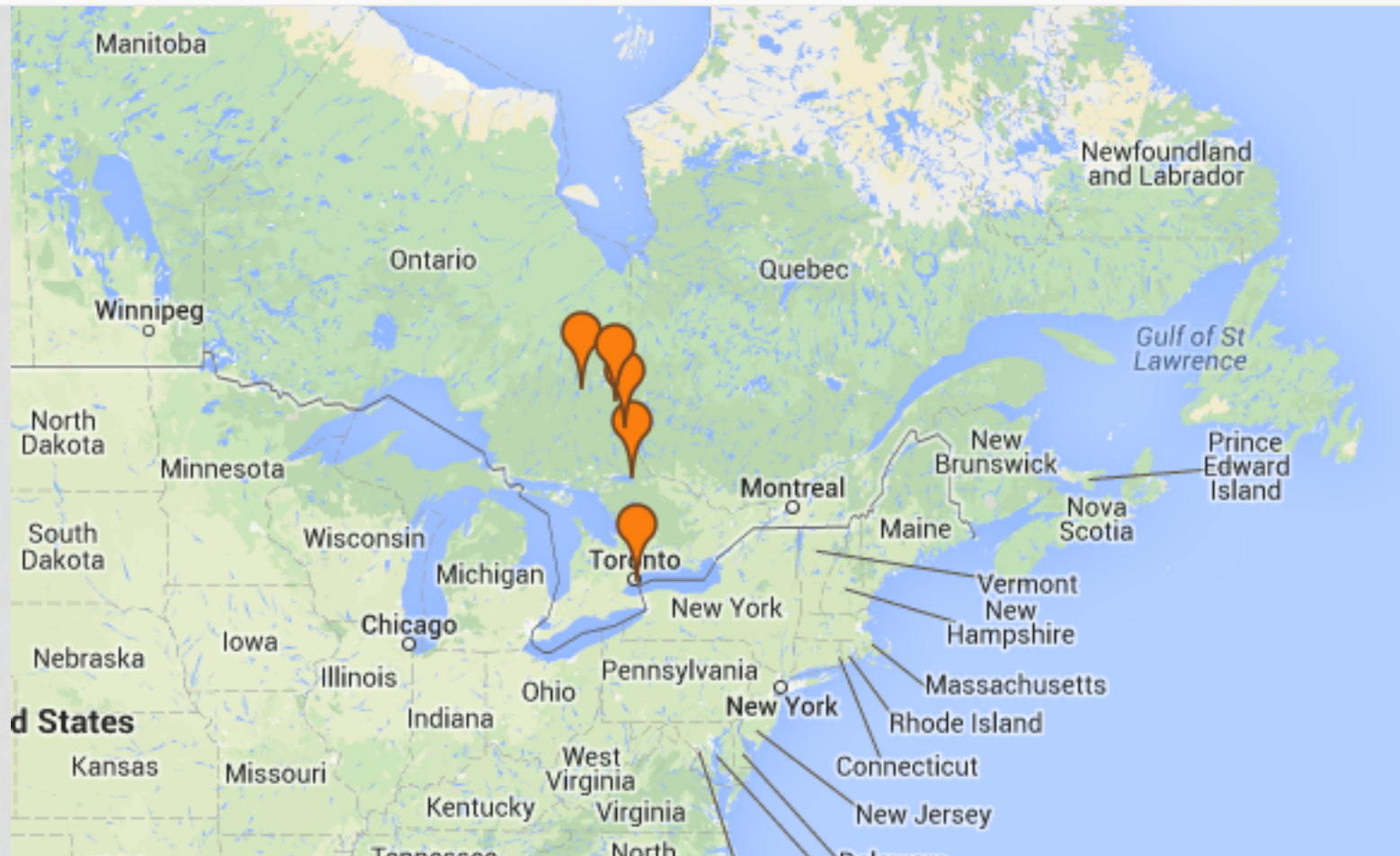
CANADA 2003-2008

CANADIAN CORPORA				
Corpu s	A g e	Male	Female	Size (words)
Toronto (2002-06)	9-92	101	113	1,796,670
Belleville (2007-08)	13-85	18	20	389,410
Belleville (1975)	55-96	32	25	246,922
Lakefield (2007)	21-85	5	7	146,315
Burnt River (2007-08)	15-86	8	11	175,959
Thunder Bay (2007-08)	12-88	17	20	256,856
Total	9-96	181	196	3,012,132

COMMUNITY DATA

- A speech community sample need not include the large number of individuals usually required for other kinds of behavioral data ... It is crucial however, that the sample be *well chosen*, and *representative* of all social subsegments about which one wishes to generalize.
- Gillian Sankoff 1980:51-52

RESEARCH SITES



PERSONAL & CONFIDENTIAL

- And I was on a date actually with a really bad date, and I was like, "Hey, how are you doing?" 'Cause I 'd just come out of the bathroom, and he's like, "I 'm fine," and then he went and then they called him on stage and I'm like, "What? What 's going on?" and then he did some Stevie-Wonder thing and I freaked out and then he came back and I said "Oh that was great," and he just goes, "Yeah thanks," and like walks away.
- Annie Muscat, age 22, 2002



INNOVATIONS

- And I was on a date actually with a really bad date, and I was like, "Hey how are you doing?" 'Cause I 'd just come out of the bathroom, and he 's like, "I 'm fine," and then he went and then they called him on stage and I 'm like, "What? What 's going on?" and then he did some Stevie-Wonder thing and I freaked out and then he came back and I said "Oh that was great," and he just goes, "Yeah thanks," and like walks away
- Annie Muscat, age 22, 2002



VERNACULAR LEXICON

- And I was on a date actually with a really bad date, and I was like, "Hey how are you doing?" 'Cause I 'd just come out of the bathroom, and he's like, "I 'm fine," and then he went and then they called him on stage and I'm like, "What? What 's going on?" and then he did some Stevie-Wonder thing and I freaked out and then he came back and I said "Oh that was great," and he just goes, "Yeah thanks," and like walks away
- Annie Muscat, age 22, 2002



STRUCTURE OF DISCOURSE

- **And** I was on a date actually with a really bad date,
- **and** I was like, "Hey, how are you doing?" 'Cause I 'd just come out of the bathroom,
- **and** he's like, "I 'm fine,"
- **and** then he went
- **and** then they called him on stage
- **and** I'm like, "What? What 's going on?"
- **and** then he did some Stevie-Wonder thing
- **and** I freaked out and then he came back
- **and** I said "Oh that was great,"
- **and** he just goes, "Yeah thanks,"
- **and** like walks away.



CULTURAL INDICATORS

- And I was on a date actually with a really bad date, and I was like, "Hey, how are you doing?" 'Cause I 'd just come out of the bathroom, and he's like, "I 'm fine," and then he went and then they called him on stage and I'm like, "What? What 's going on?" and then he did some Stevie-Wonder thing and I freaked out and then he came back and I said "Oh that was great," and he just goes, "Yeah thanks," and like walks away.
- Annie Muscat, age 22, 2002



SOCIOLINGUISTIC DATA

- Small!
- Incredibly difficult to obtain, transcribe, maintain, etc.
- Intensely personal, private and protected by ethics considerations
- Key insights into language change, diffusion, socio-cultural developments, etc.

CASE STUDIES

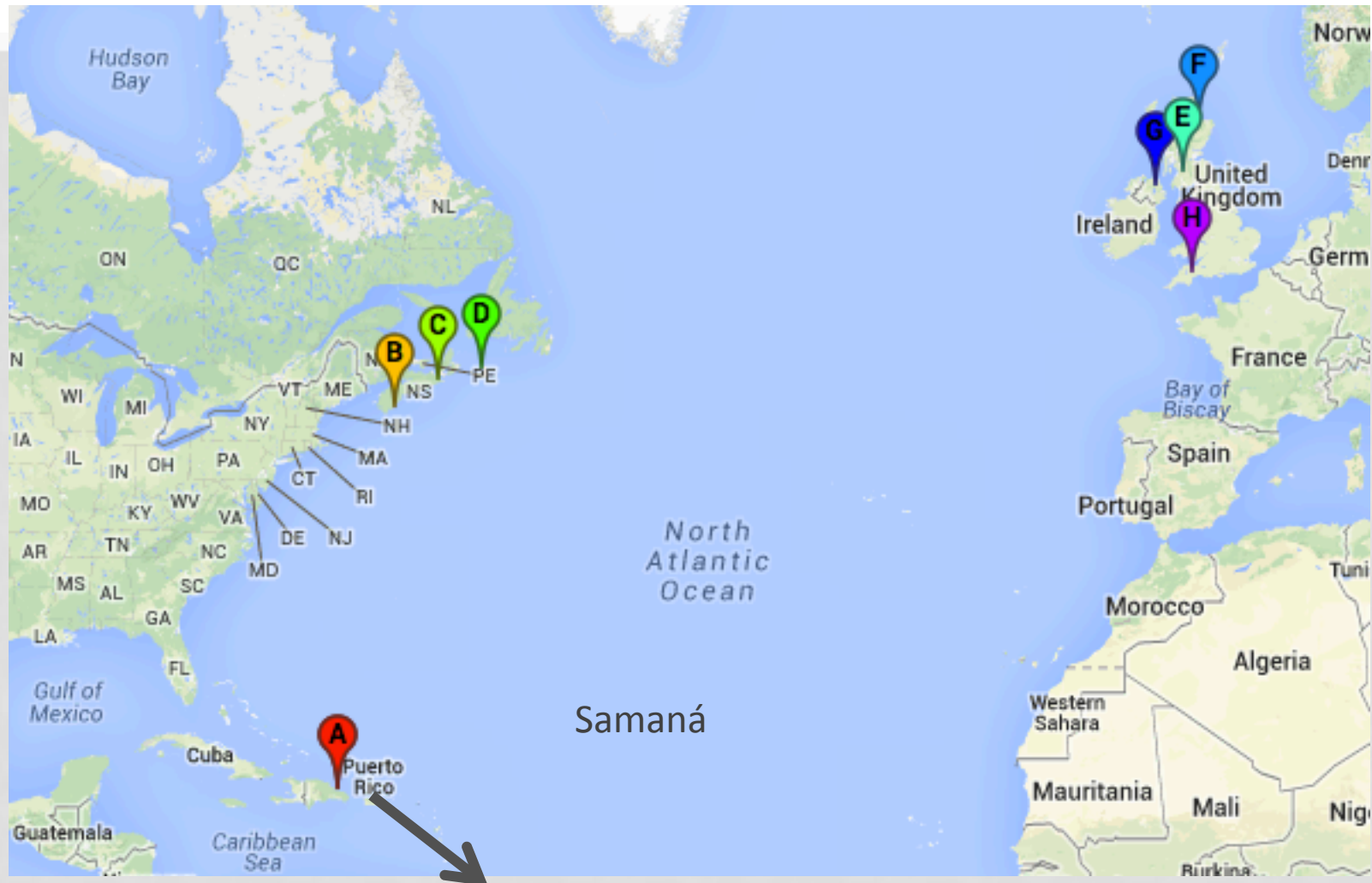
- A real world puzzle
- A theoretical issue
- Propagation and trends

ANCESTRY AND CULTURE

- “When the subject is a noun ... the verb takes the termination **-s** in all persons.”
- Murray 1873:211



RESEARCH SITES



The English people *talks* with grammar

A REAL WORLD PUZZLE

- A grammatical error?
- L2 interference?
- Why is this variety different?
- Ethnicity? Ancestry? Origins?
- A dialectal pattern?
- A mystery and
 - *A woolley mammoth*

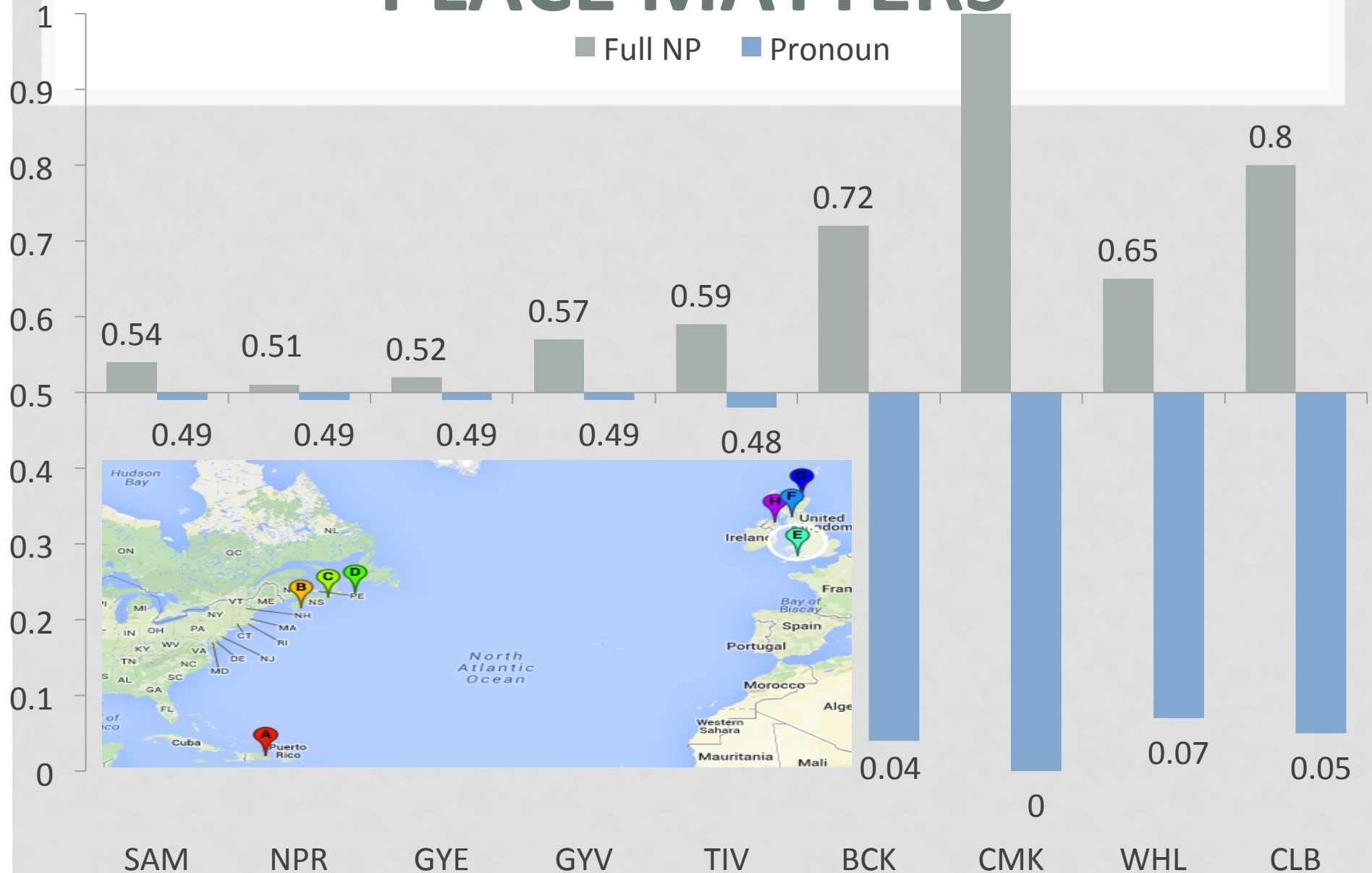


NORTHERN SUBJECT RULE

- Interpreted quantitatively **-s** can be expected to be more frequent after a noun phrase than after pronouns.
- **The cattle** all **goes** to, to the big markets, these days... **they go** straight to the slaughter house. (Bryan James, age, 75, Devon, Southwest England)

PLACE MATTERS

■ Full NP ■ Pronoun

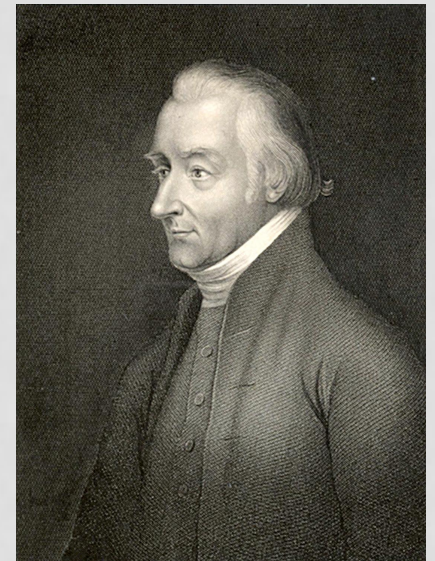


INTERPRETATION & EXPLANATION

Variable verbal **–s** is a feature of dialectal varieties of English

The Northern Subject Rule

- In contexts of transmission, pattern is exactly as in historical record
- In contexts of diffusion, the pattern becomes quantitative
- *Next time you hear –s ...*

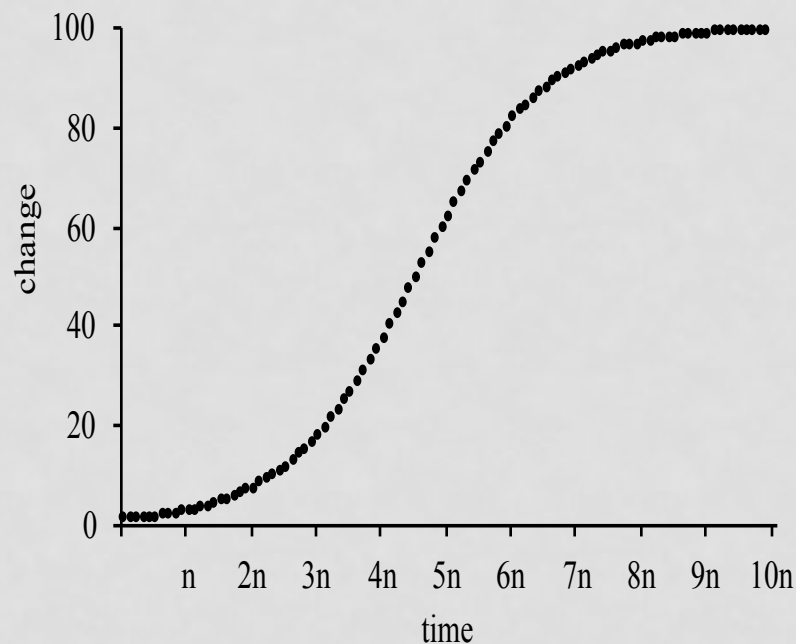


Lindley Murray

A THEORETICAL ISSUE

How does language change?

“If teenagers spoke only to octogenarians, there might indeed be breakdowns in intelligibility.” (Chambers 2002:365)



➤ $I = K_1 / (1 + K_2 / N_0 \times e^{-rt})$

➤ The Verhulst model or logistic growth curve (generates the logistic distribution of the S-curve)

TORONTO CANADA

- Multi-million word sample of 200+ individuals born and raised in Toronto
- Stratified by age, sex, education, job type
- North American English at turn of 21st century



SOCIALLY EMBEDDED DATA

DISC. MARKER			QUOTATIVE		INTENSIFIER		MODAL		POSSESSIVE		FUTURE	
<u>like</u>			<u>be like</u>		<u>so</u>		<u>have to</u>		<u>have</u>		<u>going to</u>	
<u>Age</u>	<u>female</u>	<u>male</u>	<u>female</u>	<u>male</u>	<u>female</u>	<u>male</u>	<u>female</u>	<u>male</u>	<u>female</u>	<u>male</u>	<u>female</u>	<u>male</u>
< 13	175	141	387	57	281	393	97	47	141	120	154	84
13-16	136	133	387	306	807	697	83	71	141	158	166	201
17-29	543	513	1818	632	1402	882	348	146	516	428	476	380
30-39	177	177	341	178	172	176	59	46	105	120	146	111
40-49	143	152	100	353	154	157	35	48	91	121	112	108
50-59	147	161	366	122	169	151	44	19	90	57	105	62
> 60	435	330	348	200	168	109	69	62	219	280	204	252
N	1756	1607	3705	1848	3153	2565	735	439	1303	1284	1363	1198
total N		3363		5553		5718		1174		2587		2561
total N											20,956	

A THEORETICAL ISSUE

➤ Transmission

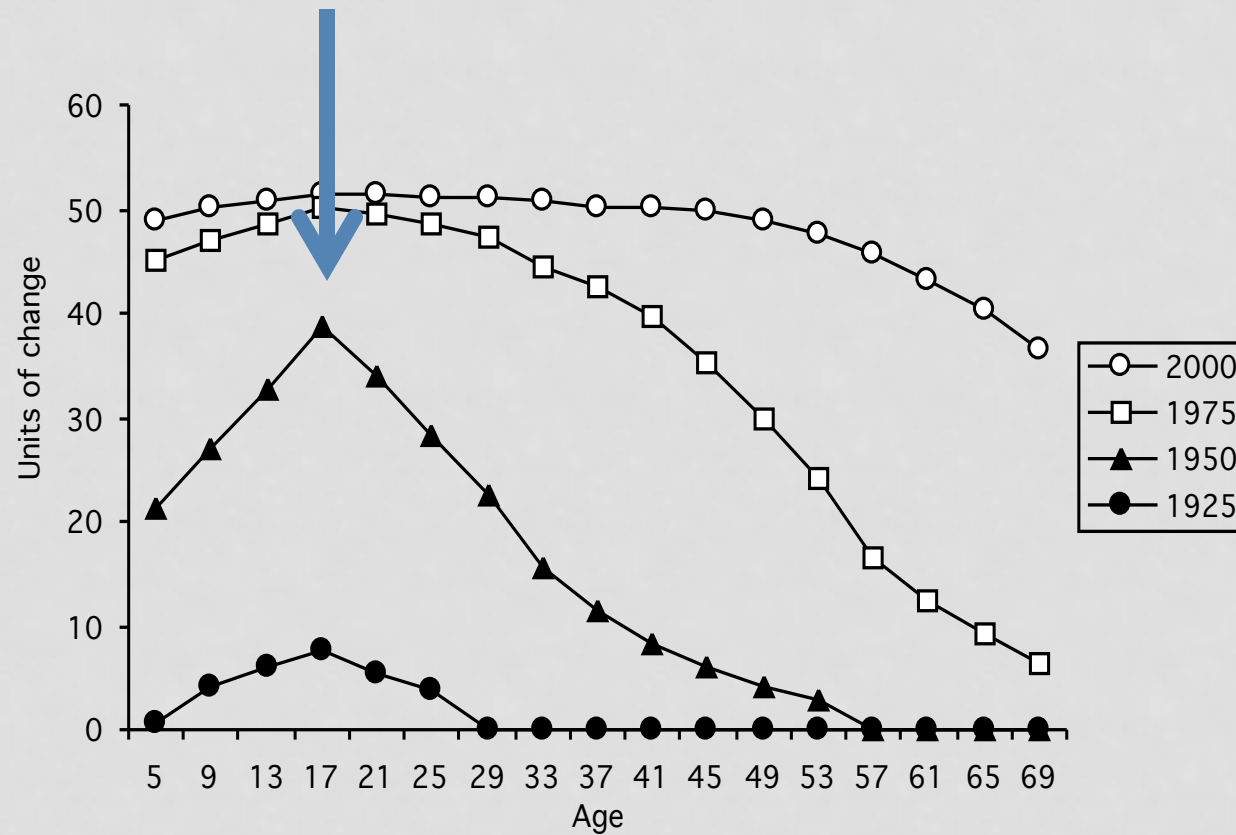
- How does language change progress from one generation to the next?

➤ Incrementation

- What is the mechanism that advances the change along the curve?

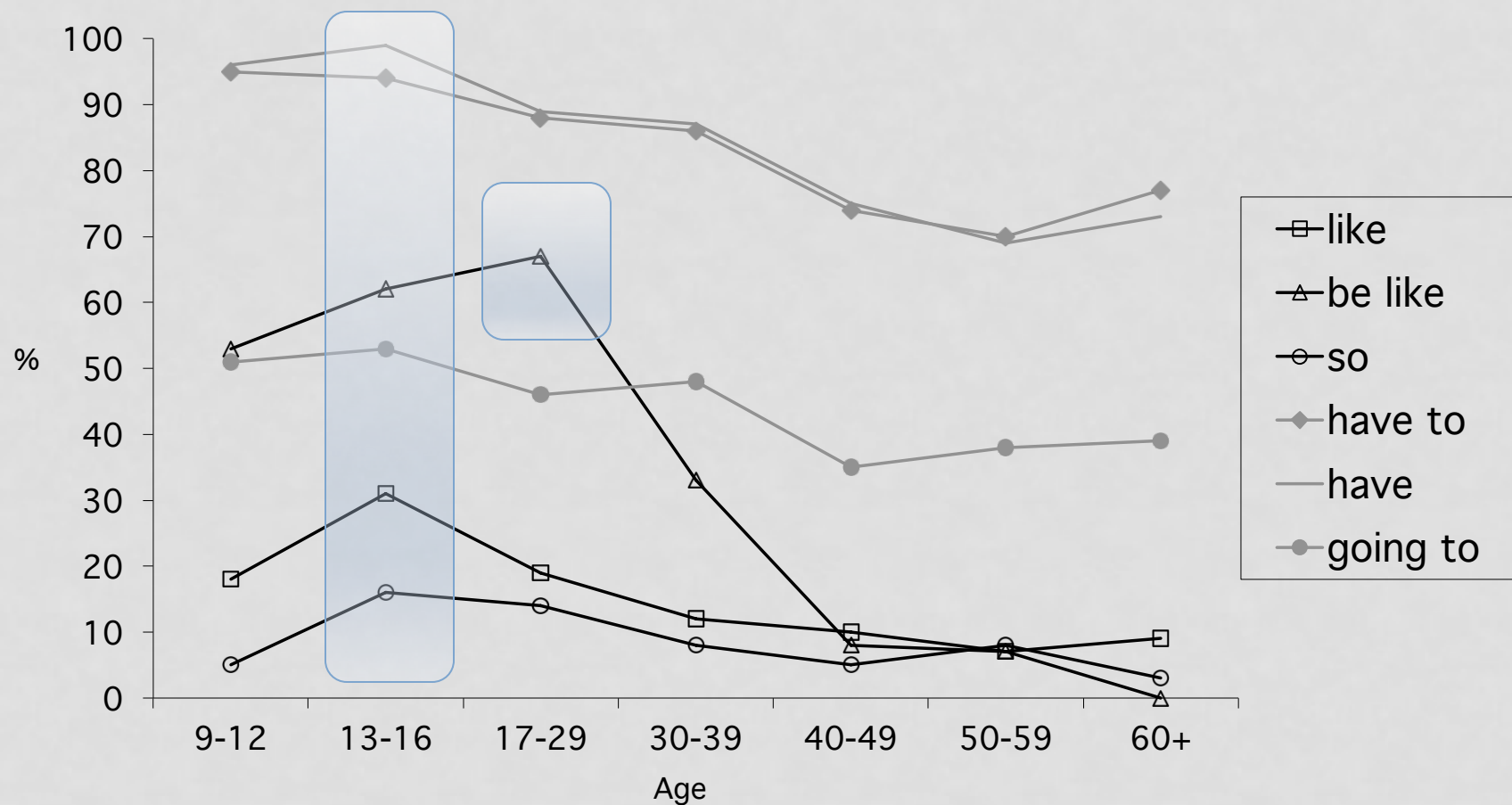
LOGISTIC INCREMENTATION

(LABOV 2001:453, FIGURE 14.5)



AGE MATTERS!

TAGLIAMONTE & DARCY (2007)



INTERPRETATION & EXPLANATION

- The findings confirm that the *logistic incrementation model* is indeed “a general requirement” of the evolution of linguistic systems
 - Labov 2001

TRENDS AND PREDICTION

- Language change tends to start in urban centres and spread out to rural locales
 - Chambers & Trudgill, 1980
- Corpora of speech that represent communities provide insight into the stage of a linguistic change or level of participation of a community in ongoing linguistic change
 - Tagliamonte 2003, 2004

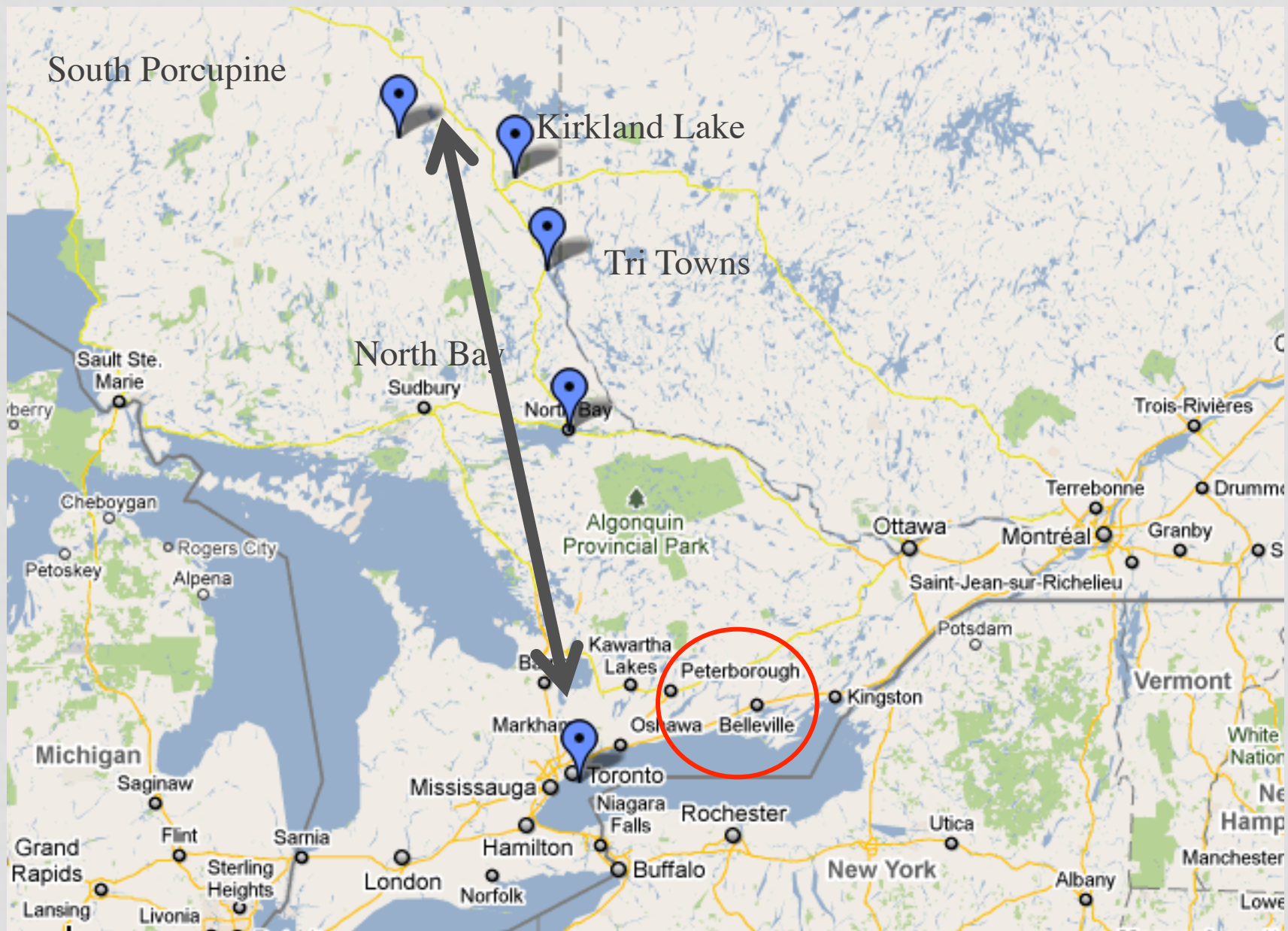
USING LINGUISTIC PATTERNS

➤ *Transmission*

- Preservation of patterns (constraints)
- Complex phonetic, grammatical and lexical specification
 - Labov 2007: 371

➤ *Diffusion*

- Loss of structural detail
- Loss or re-organization of patterns (constraints)
 - Labov 2007: 356, 378

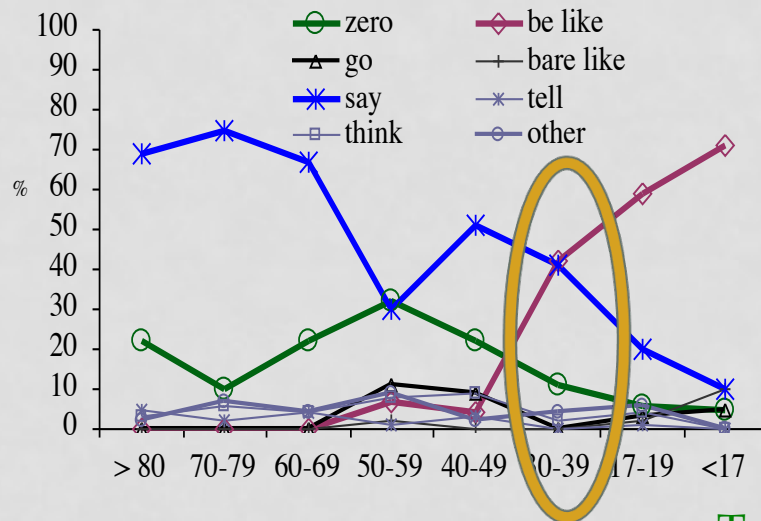


A FRESH INNOVATION

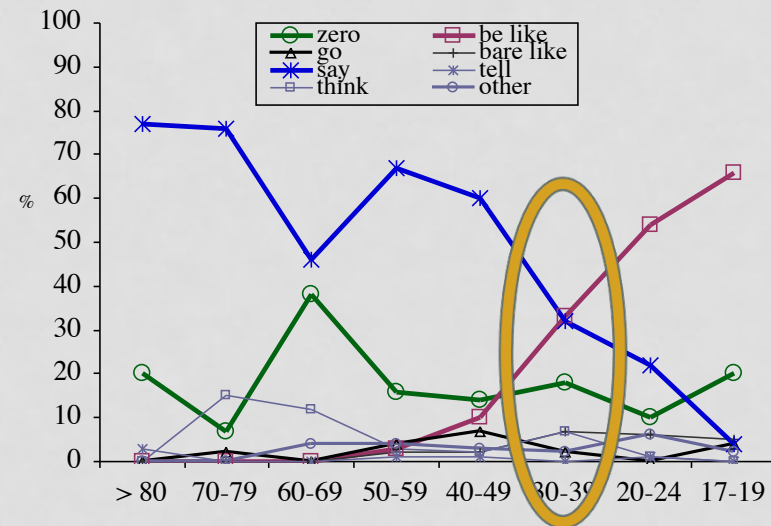
- From the 1980's, *be like* rising as a new quotative
 - Tagliamonte 1995, *et seq*
- Hypotheses:
 - Torontonians (born and raised in the city) predicted be on the forefront of linguistic innovation in Canada; Ontario towns should lag behind
 - Change predicted move from the largest city to the next larger and so on
 - Cascade Model, Trudgill (1974)

FREQUENCY

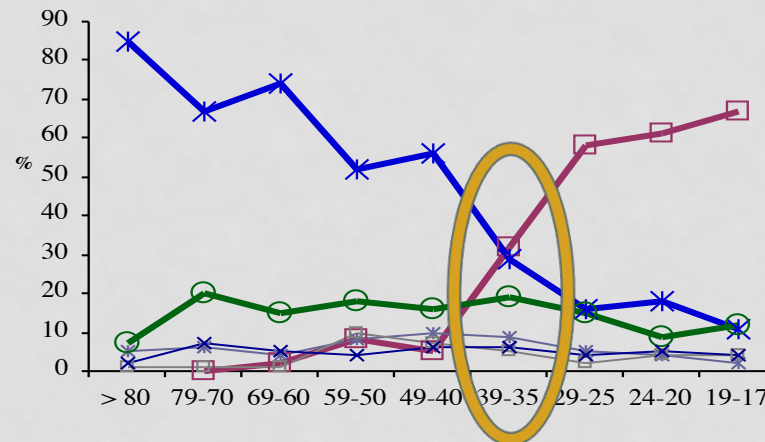
South Porcupine



North Bay



Toronto



MODELING AND PREDICTING









- What predicts when a person will use *be like*?
 - 1st person
 - *I'm like, "Oh my god!"*
 - Internal thought
 - *And then in my mind, I'm like, "Oh my god!"*
 - Present tense
 - *I'm like vs. I was like*
 - Females favour

MODELLING CONSTRAINTS

Fixed effects:

	Estimate	Std. Error	z value	Pr(> z)	
(Intercept)	-1.67514	0.73041	-2.293	0.021824	*
TENSE MORPHOLOGY					
Present					
Past	-0.80174	0.21429	-3.741	0.000183	***
GRAMMATICAL PERSON					
First person					
Other	0.62944	0.21195	2.970	0.002981	**
SEX					
Female					
Male	1.16162	0.61082	1.902	0.057204	.
TYPE OF QUOTE					
Direct					
Internal dialogue	0.53784	0.35375	1.520	0.128406	
COMMUNITY					
Belleville					
Burntfield	0.08127	1.03754	0.078	0.937566	
NorthBay	-0.54437	0.77625	-0.701	0.483127	
Porcupine	-0.75553	0.87273	-0.866	0.386648	
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1					



MORPHOLOGY

	TORONTO [17-19 yrs]	SOUTHEASTERN ONTARIO	NORTH BAY	PORCU- PINE
Input	.73	.66	.74	.79
Total N	3462	586	616	567
MORPHOLOGY				
Present	.69 	.70 	.57 	.67 
Past	.47	.39	.60	.27
Other	.26 	.19 	.25 	.14 







GRAMMATICAL PERSON

	TORONTO [17-19 yrs]	SOUTHEASTERN ONTARIO	NORTH BAY	PORCU- PINE
GRAMMATICAL PERSON				
1st Person	.53	.61	.57	[.54]
Other person	.47	.41	.44	[.45]

TYPE OF QUOTE

	TORONTO [17-19 yrs]	SOUTHEASTERN ONTARIO	NORTH BAY	PORCU- PINE
TYPE OF QUOTE				
Internal thought	.57 	.50 	[.32]	[.47]
Direct speech	.48	.47	[.51]	[.50]

SEX

	TORONTO [17-19 yrs]	SOUTHEASTERN ONTARIO	NORTH BAY	PORCU- PINE
SEX				
Female	.55 	.54 	.49 	.47 
Male	.38	.37	.54 	.51 

SUMMARY

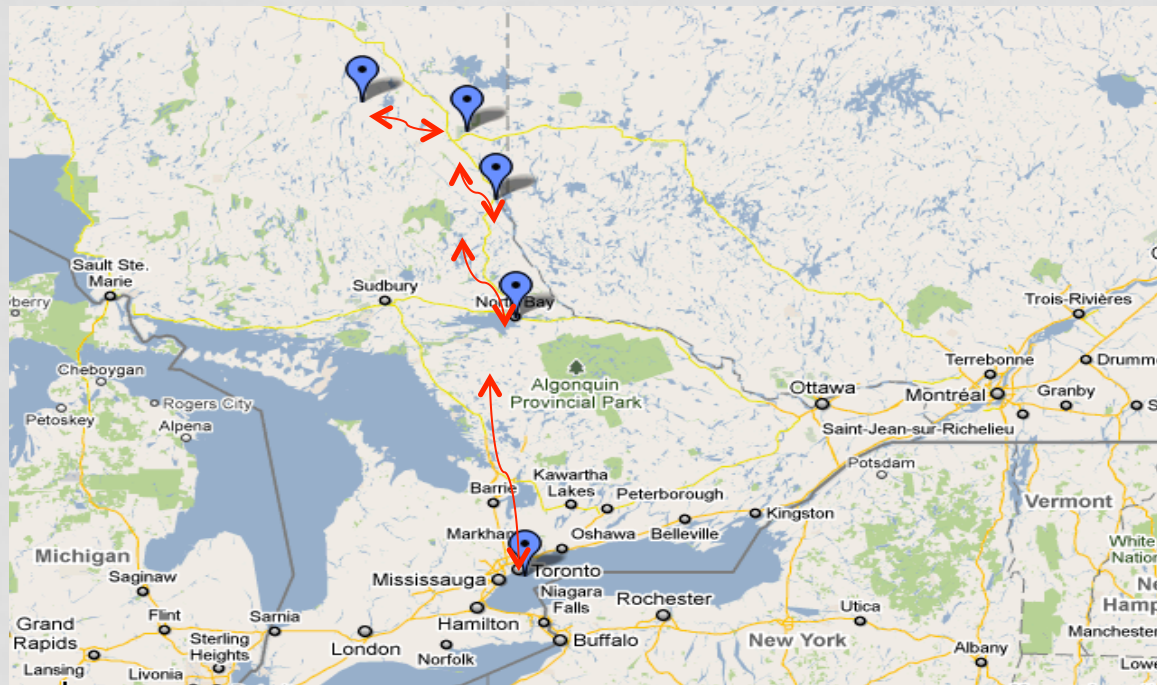
	TORONTO [17-19 yrs]	ONTARIO	NORTH BAY	PORCU- PINE
GRAMMATICAL PERSON	✓	✓	✓	X
TENSE MORPHOLOGY	✓	✓	✓ X	X
TYPE OF QUOTE	✓	✓	X	X
SEX	✓	✓	X	X

OBSERVATIONS

- ❖ *Be like* has arrived in the small towns of Northern Ontario! But to varying degrees correlated with distance from Toronto
- ❖ The small towns of Northern Ontario exhibit a quotative system similar to, but systematically distinct from the variable grammar in the south
- ❖ The effects of *diffusing change* can be viewed in Northern Ontario in the shifting pattern of constraints

OBSERVATIONS

- ❖ The landscape from south to north in Ontario shows the incremental degradation of structural detail on the variable grammar of linguistic change the further north ones goes!



TAKE AWAY MESSAGE

- Sociolinguistic studies can address prevailing puzzles and offer solutions to real world problems
- **BUT** ... Sociolinguistic research is only as good as the
 - Quality and representativeness of the data
 - Capability of the technologies for extracting and analyzing important trends
 - Relevance of the interpretations, socially and statistically

THANKS TO...

- The Social Science and Humanities Research Council of Canada (SSHRC) for research grants 2001-present



Social Sciences and Humanities
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Canada

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Lauréats
KILLAM 
Laureates