

Accented English: The Bias and the Science

The production and perception of
non-native speech

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Accented speech has a history

...then they said unto him, "Say now Shibboleth," and he said, "Sibboleth," for he could not frame to pronounce it right; then they laid hold of him, and slew him at the fords of the Jordan. And there fell at that time of Ephraim forty and two thousand.

(Judges 12:6)

Accents in current events

■ *Arizona Grades Teachers on Fluency*

*State Pushes School Districts to Reassign Instructors With **Heavy Accents** or Other Shortcomings in Their English*

(Wall Street Journal, 30 April 2010)

The New Yorker, 20 September 2010



"Anything you say with an accent may be used against you."

The Organization of today's talk

- Focus is on the sound systems of language
- *Innate* ability to distinguish speech accents
- Making biased judgments is *learned*
- Representations of accent in our society
- The science of accent
- The Speech Accent Archive

Noticing speech characteristics

Noticing speech characteristics

■ Sex



Noticing speech characteristics

■ Sex



male



female

Noticing speech characteristics

- Sex

- Age



Noticing speech characteristics

- Sex

- Age 76 18

Noticing speech characteristics

- Sex
- Age
- Your (Native) Speech Community



Noticing speech characteristics

- Sex
- Age
- Your (Native) Speech Community

Brooklyn	Melbourne	Pine Bluff	Yole
New York	Australia	Arkansas	India

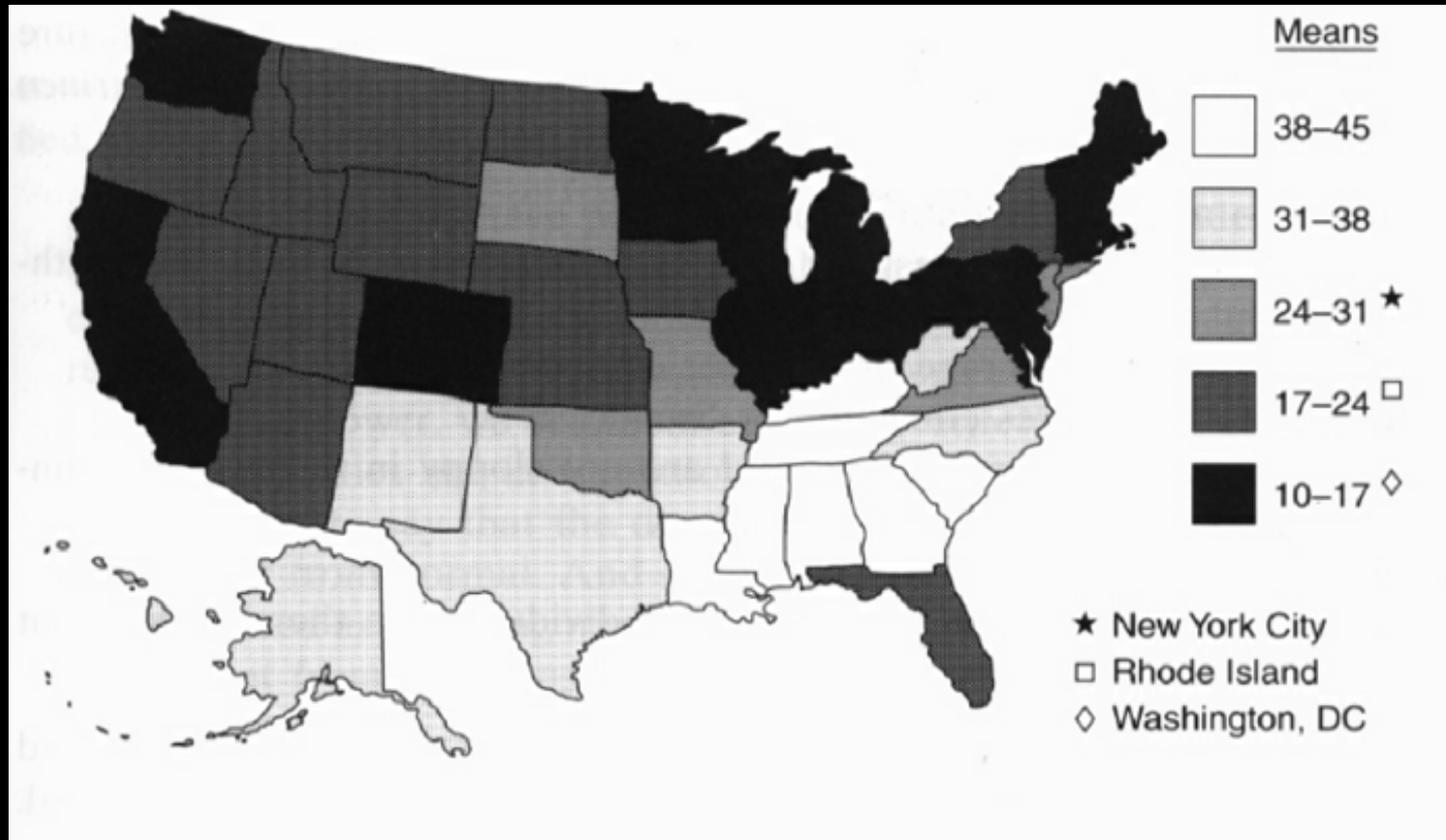
Noticing speech characteristics

- Sex
- Age
- Your vs. Other Speech Community
- This is *automatic* behavior

Judging accented speech

- Reveals a bias against otherness
- This is *learned* behavior

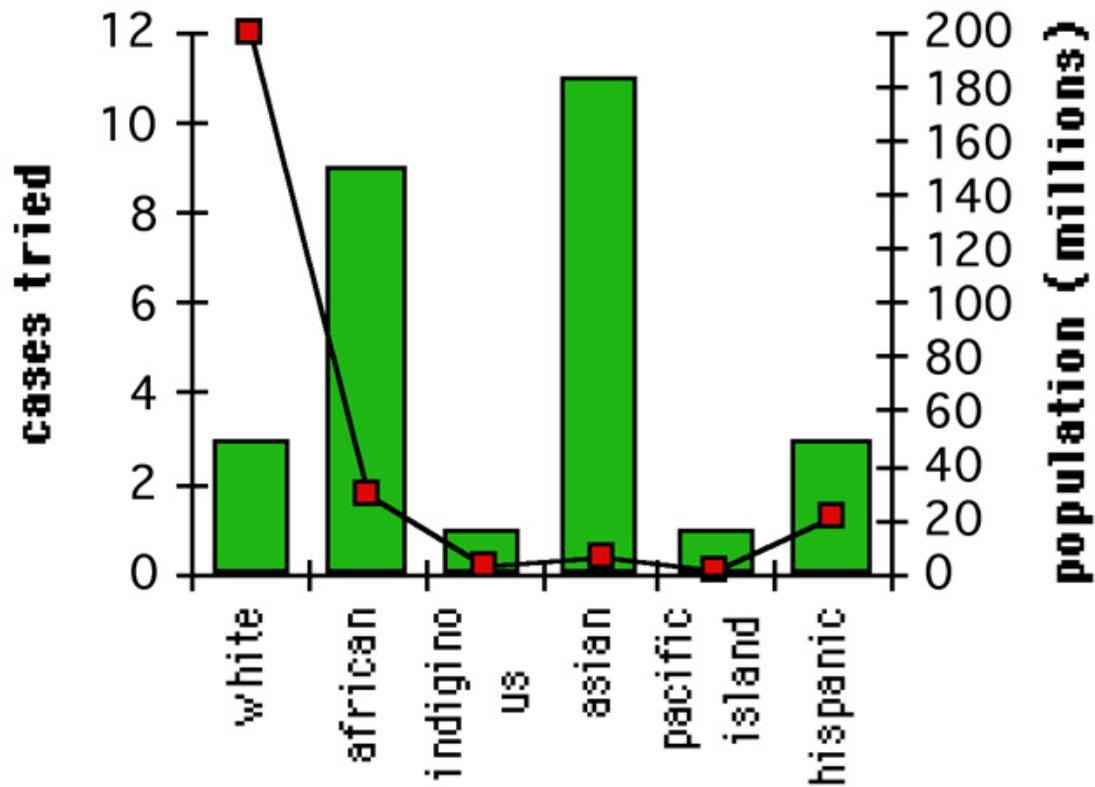
Judging regional accents



(Preston, 1989)

Discrimination via accent

Accent litigation



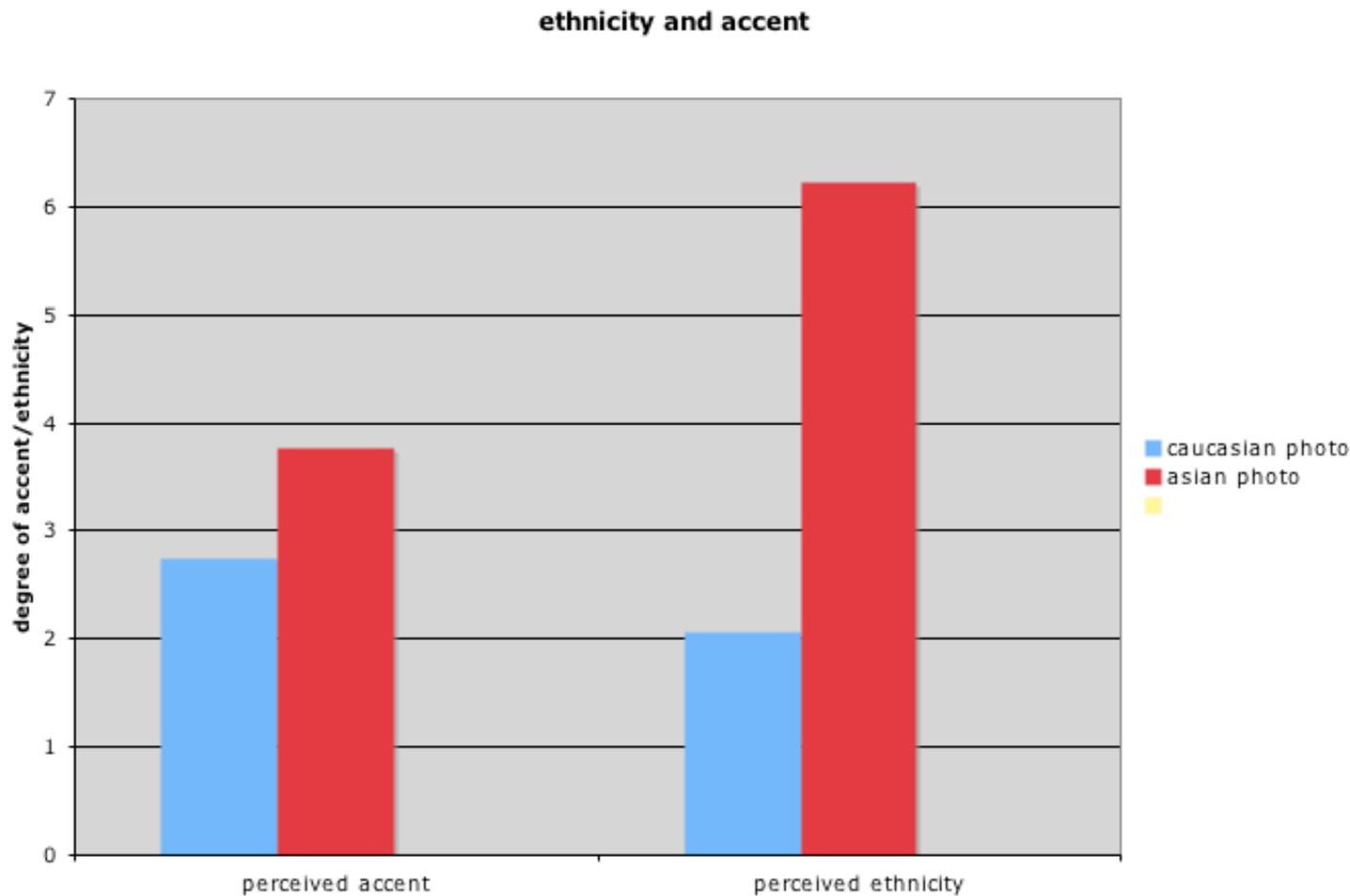
(Lippi-Green, 1997)

Accent and perceived credibility

- listeners tend not to believe foreign accented speakers

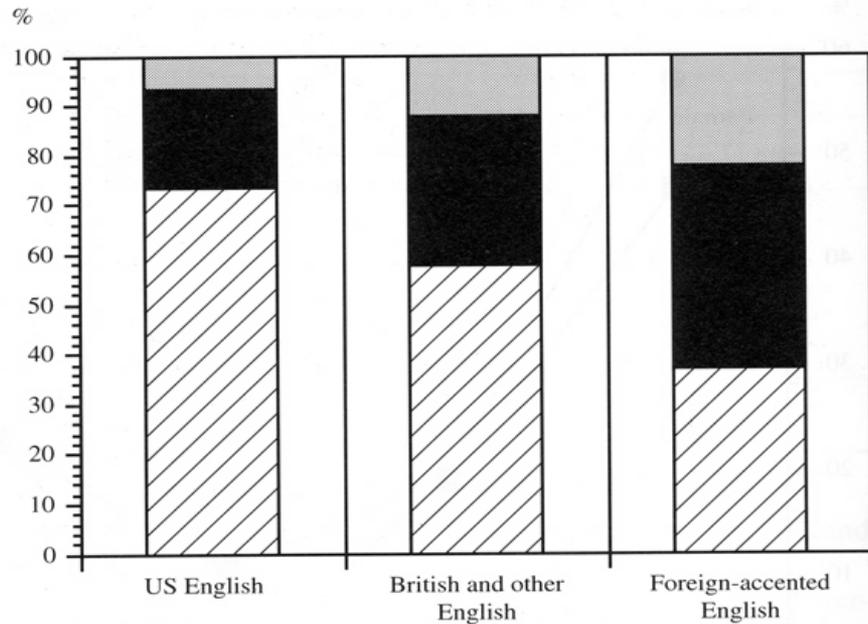
(Lev-Ari and Keysar, 2011)

Perceived ethnicity and accent



(Rubin, 1992)

Learning to be biased



	US English	British and other English	Foreign-accented English
Positive %	73.5	57.6	37
Negative %	19.9	30.4	40.7
Mixed %	6.6	12	22.2

(Lippi-Green, 1997)

Film representations: we listen carefully

■ ***Empire* magazine's 10 worst movie accents**

- 1. Sean Connery in *The Untouchables* (1987)
- 2. Dick van Dyke in *Mary Poppins* (1964) 
- 3. Brad Pitt in *Seven Years in Tibet* (1997)
- 4. Charlton Heston in *Touch of Evil* (1958)
- 5. Heather Graham in *From Hell* (2001)
- 6. Keanu Reeves in *Bram Stoker's Dracula* (1992)
- 7. Julia Roberts in *Mary Reilly* (1996)
- 8. Laurence Olivier in *The Jazz Singer* (1980)
- 9. Pete Postlethwaite in *The Usual Suspects* (1995)
- 10. Meryl Streep in *Out of Africa* (1985)

Accent in our favorite cartoons

- Boris and Natasha



- Pepe LePew



The role of accent in commercials

The Science of Accents

- Native language transfer

- 1 

- 2 

- 3 

Foreign accents: a window to the native system

■ Native language transfer to English

- 🔊 ■ 1 Russian h --> [xʲ], w--> [v], [ð] --> [d]
- 🔊 ■ 2 French h --> ∅ , [ð] --> [z], [θ] --> [s]
- 🔊 ■ 3 Gujarati t --> [t], w--> [v], [θ] --> [t]

Comparing sound systems

CONSONANTS
(PULMONIC)

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b		t d			ʈ ɖ	c ɟ	k ɡ			
Nasal	m			n		ɳ					
Trill											
Tap or Flap				r							
Fricative				s			ʃ				h
Affricate											
Lateral fricative											
Approximant		ʋ					j				
Lateral approximant				l		ɭ					

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

gujarati

english

CONSONANTS
(PULMONIC)

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d				k ɡ			
Nasal	m			n				ŋ			
Trill											
Tap or Flap											
Fricative		f v	θ ð	s z		ʃ ʒ					h
Affricate						tʃ dʒ					
Lateral fricative											
Approximant						ɹ	j				
Lateral approximant				l							

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

Foreign accents reveal language universals

- Final consonant devoicing:
 - Hungarian 
 - Mandarin 
- Hungarian has voiced final consonants
- Mandarin has no final consonants

Foreign accents show compensatory behavior

■ Bafang

- Nasalization: “train” --> [tɹiẽɪ]
- Vowel lengthening “call” --> [kɑɑ]

Foreign accents are inevitable

- 1. Turkish 
- 2. Turkish 
- 3. Turkish 

Are foreign accents inevitable?

- 1. Turkish English onset at age 17
- 2. Turkish English onset at age 6
- 3. Turkish English onset at age 3

All were exposed to 10 years or more of English

Age of onset is crucial

Can length of residence help?

- 1. Korean 
- 2. Korean 

Can length of residence help?

- 1. Korean Length of english residence = 0
- 2. Korean Length of english residence = 23

Both speakers' age of english onset = 12

The biological foundation of speech accent

■ The Critical Period Hypothesis

(Lenneberg, 1967; Long 2005)

- There is a biologically-determined period when a language can be acquired perfectly and completely by a speaker. After this period, the speaker will not be considered to have “native” speech characteristics.

speech accent archive

- thousands of samples (and growing)
- 400 native language backgrounds
 - American English to Zulu
- Searchable
- Collaborative
- Qualified remote submissions
- ~1 million hits per month

The elicitation paragraph

- Please call Stella. Ask her to bring these things with her from the store: six spoons of fresh snow peas, five thick slabs of blue cheese, and maybe a snack for her brother Bob. We also need a small plastic snake and a big toy frog for the kids. She can scoop these things into three red bags, and we will go meet her Wednesday at the train station.

Representative Sounds

single consonants		vowels	clusters	
initial	final		initial	final
k (3)	z (5)	i (12)	pl (2)	sk (1)
t (3)	l (4)	ɑ (4)	st (4)	ŋz (2)
ð (6)	ŋ (1)	ɛ (4)	bɹ (2)	ks (1)
θ (3)	θ (1)	æ (10)	fɹ (3)	nz (2)
w (5)	m (1)	ɪ (11)	sp (1)	bz (1)
s (2)	ɹ (5)	ʌ (2)	sn (3)	nd (3)
f (3)	v (3)	ə (10)	sl (1)	dz (1)
tʃ (1)	ʃ (1)	u (5)	bl (1)	gz (1)
n (1)	k (4)	oʊ (3)	sm(1)	
b (3)	b (1)	aɪ (1)	sk (1)	
l (1)	d (2)	eɪ (5)	θɹ (1)	
ʃ (2)	g (2)	ɔ (3)	tɹ (1)	
d (1)	n (4)	ɔɪ (1)		
ɹ (1)	p (1)			
g (1)	t (2)			
m (2)				
h (4)				

Phonetic Transcription

- Narrow segmental IPA transcription
 - Produced by 3 trained transcribers
 - Spaces added for readability
 - Vietnamese 7 

[pəlɪz k^hɑ̃ ʃ stɪlə æs hə tə pɪ̃n̩ dɪs fɪŋgs wɪt həʊ fɪl̩m də stɔɪ sɪks
spɪ̃ns ɹ Af fɪɛs sno p^hɪs faɪ θɪk slɑʃs əf blu tʃɪs æn meɪbi ɛ
snæx fɔɪ hə bɪl̩ðə bɑ wɪ ɑl^vso nɪd ə smɑ plæstɪk^ɾ s:neɪk^h æn ə
bɪg^ɾ t^hɔɪ fɪɑ̃ʃ fɔ: ðə k^hɪs ʃɪ kæ skup^ɾ ðɪs θɪŋz ɪntu θɪɪ ɪɛd^ɾ bæxs
æ̃n wɪ wɪl^v gou mɪt həʊ wɛ̃nsdeɪ æt^ɾ ðə tʃɪɛn steʃən]

Speaker demographics

- Gender
- Place of birth
- Native language
- Other language(s)
- Age
- Age of onset
- English Residency
- Learning style

speech accent archive

<http://accent.gmu.edu>