English Vowels

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How much time for each language skill

According to Burley-Allen (1995), the average time spent on basic skills during the daily communication process is

      35 % for speaking,
      16 % for reading,
       9 % for writing, and
      40 % for listening. (Flowerdew, 2005)

How can we polish our different skills in English?

How to Improve English Vowels

Deviating sounds made by EFL students

English sounds	Examples	Deviated sounds	Examples	Solutions
/i/	keep; keys	/ɪ/	kip; kiss	**Direct methods:** audio-visual (multimedia) aids and face-to-face instruction
/ɪ/	ill;	/i/	eel;	**Phonetic approaches:**
/eɪ/	take / hate	/ɛ/	/tɛk/; tek	1. The fundamental issues of the vowel space;
/ɛ/	red	/eɪ/	raid	
/æ/	bad; fast	/ɛ/	bed; fest	2. The courses/routes of each vowel phoneme in each "sound area";
/ʌ/	mother	/ɑ/	/ˈmɑðɚ/	
/ʌn/	run; country	/ɑŋ/	/rɑŋ/; /ˈkɑŋtri/	
/u/	food	/ʊ/	/fʊd/ foot?	3. The recognition and the understanding of the fact that English with different accents might have different qualities of vowel phonemes
/ʊ/	good	/u/	/gud/ goo_?	
/oʊ/	hope; boat	/ɔ/?	hop; bought	
/ɔ/	caught; law	/oʊ/	coat; low	

Deviating sounds made by EFL students

English sounds	Examples	Deviated sounds	Examples	Solutions
/i/ with different durations	key	/i/ with similar durations	key	**Phonetic approaches:** Provide examples and demonstrations
	keys		keys	
	keep		keep	

The global picture of the vowel contrast

Types		English (IPA)	Mandarin (Pinyin)	Notes
front	high		/ü/ ㄩ	mismatch
		/i/	/i/ 一	mismatch
		/ɪ/		
	mid	/eɪ/	/ei/ ㄟ	
		/ɛ/	/(i)e/ ㄝ	
	low	/æ/		mismatch
mid	mid	/ə/	/e/ ㄜ	
		/ʌ/	/a/ ㄚ	mismatch
back	low	/ɑ/		
	mid	/oʊ/	/ou/ ㄡ	
		/ɔ/	/(u)o/ ㄛ	
	high	/u/	/u/ ㄨ	mismatch
		/ʊ/		
diphthongs		/aɪ/	/ai/ ㄞ	
		/aʊ/	/ao/ ㄠ	
		/ɔɪ/		mismatch

The basic vowel phonemes in the chart

English has a total of 12 basic vowel phonemes while Mandarin has only 9 basic vowel phonemes.
Compare the following charts:

English vowel phonemes

i:		u:
ɪ		ʊ
eɪ	ə	oʊ
ɜ	ʌ	ɔ
æ	ɑ	
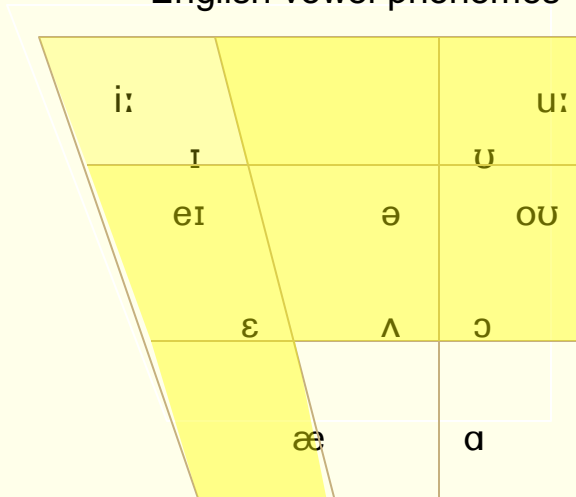
*Schwa (unstressed vowels)

Mandarin vowel phonemes

i: (一)	ü(ㄩ)	u:(ㄨ)
eɪ(ㄟ)	ə(ㄜ)	oʊ(ㄡ)
ɛ(ㄝ)		ɔ(ㄛ)
		ɑ(ㄚ)

*zhi(ㄓ),chi(ㄔ), shi(ㄕ), ri(ㄖ), zi(ㄗ),ci(ㄘ),si(ㄙ)

Acoustic qualities of the vowel
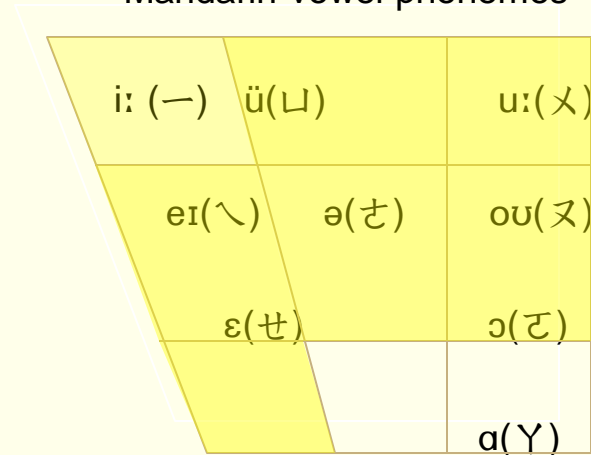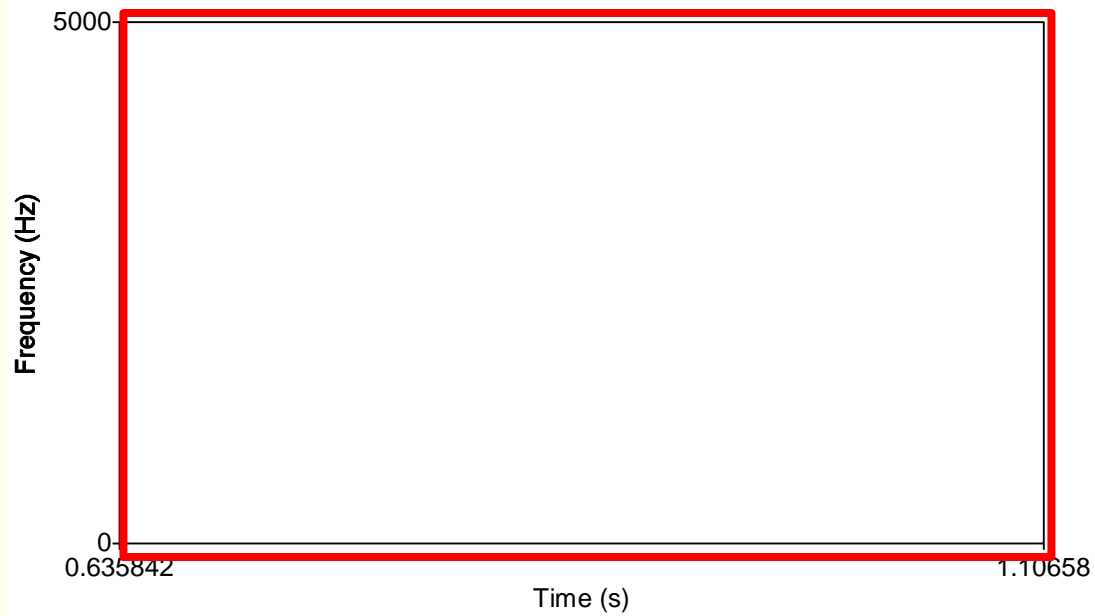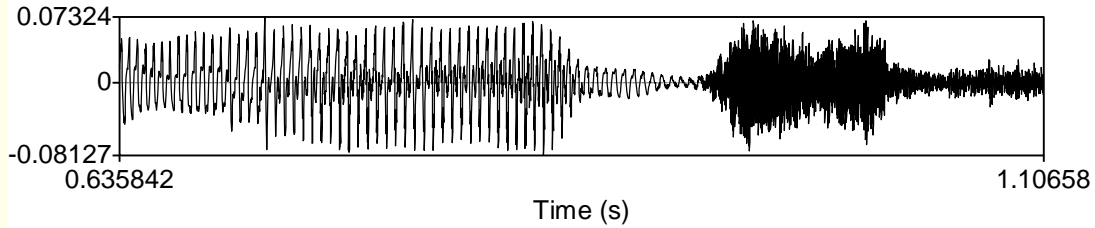
The concepts of the first formant

Formant 1: reflecting the "high" or "low" of the vowel in the oral tract
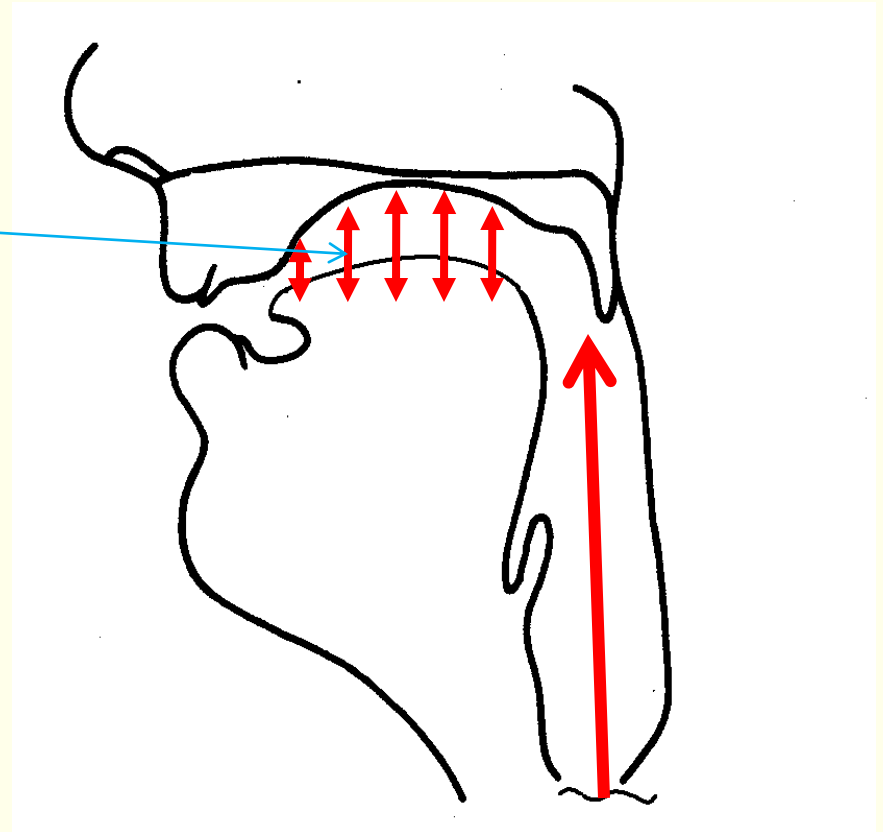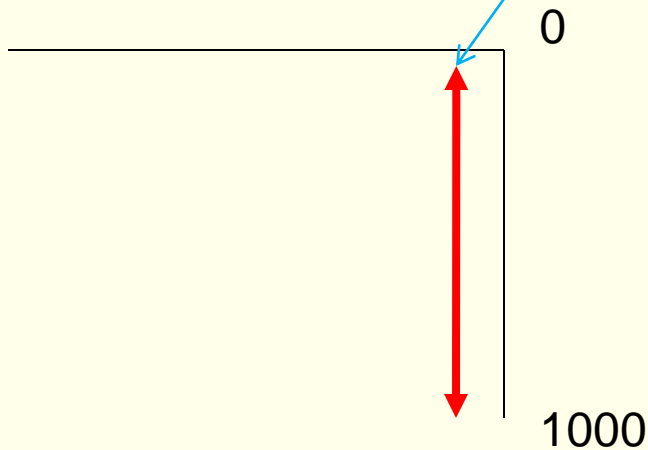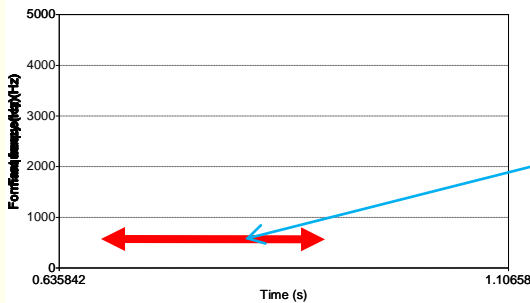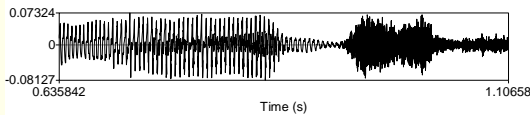
Formant 2: reflecting the "backness" of the vowel in the oral tract

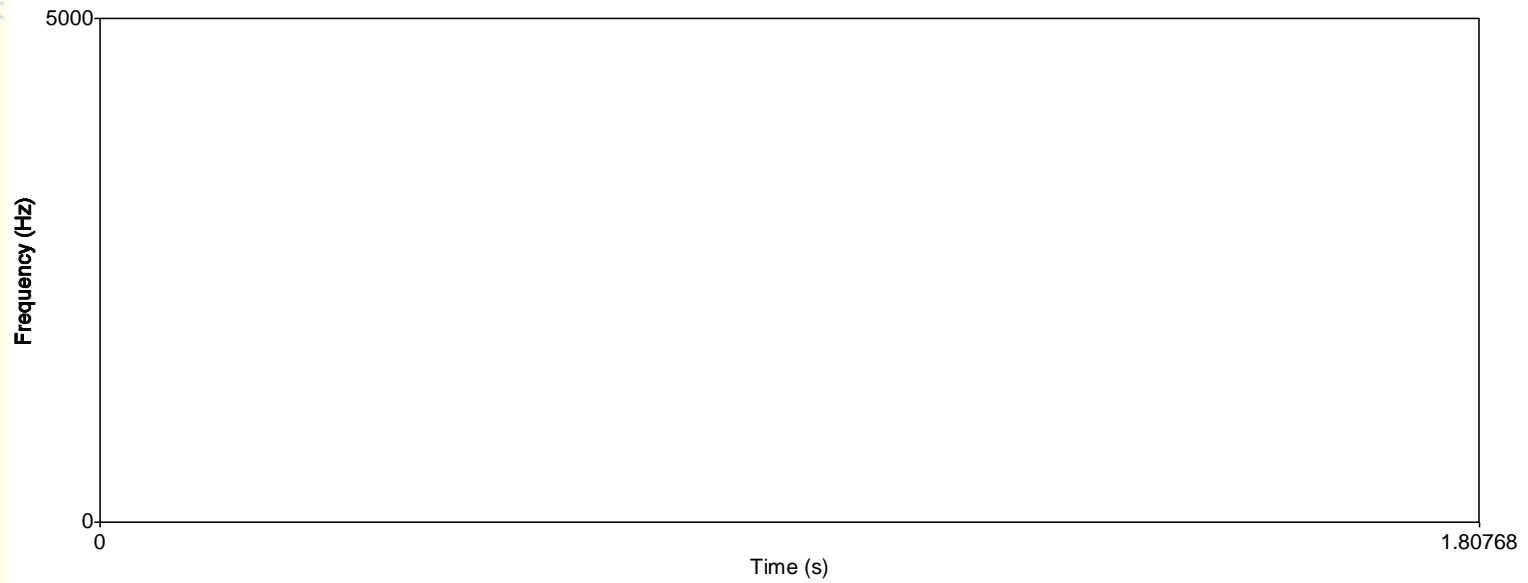3500   0

F2
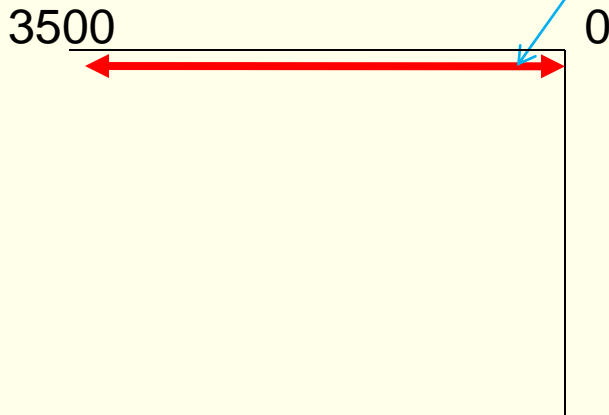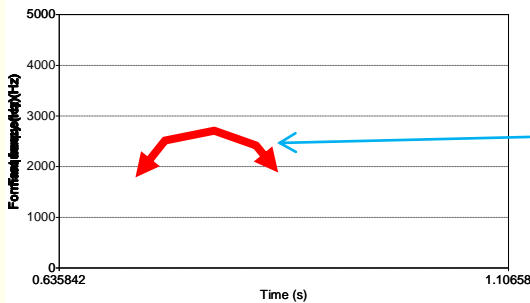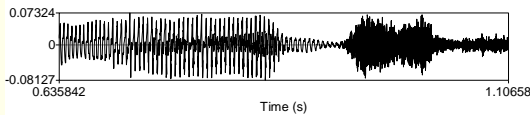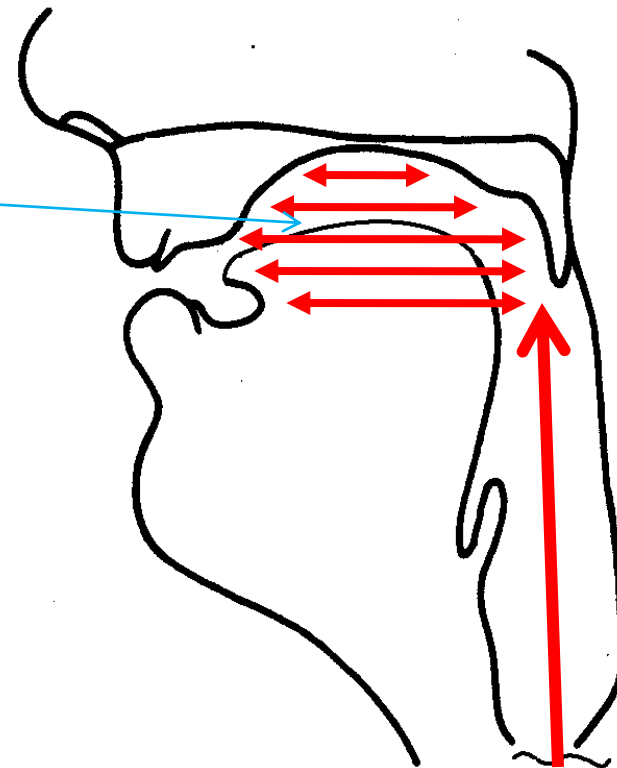
An expression with only the first formant
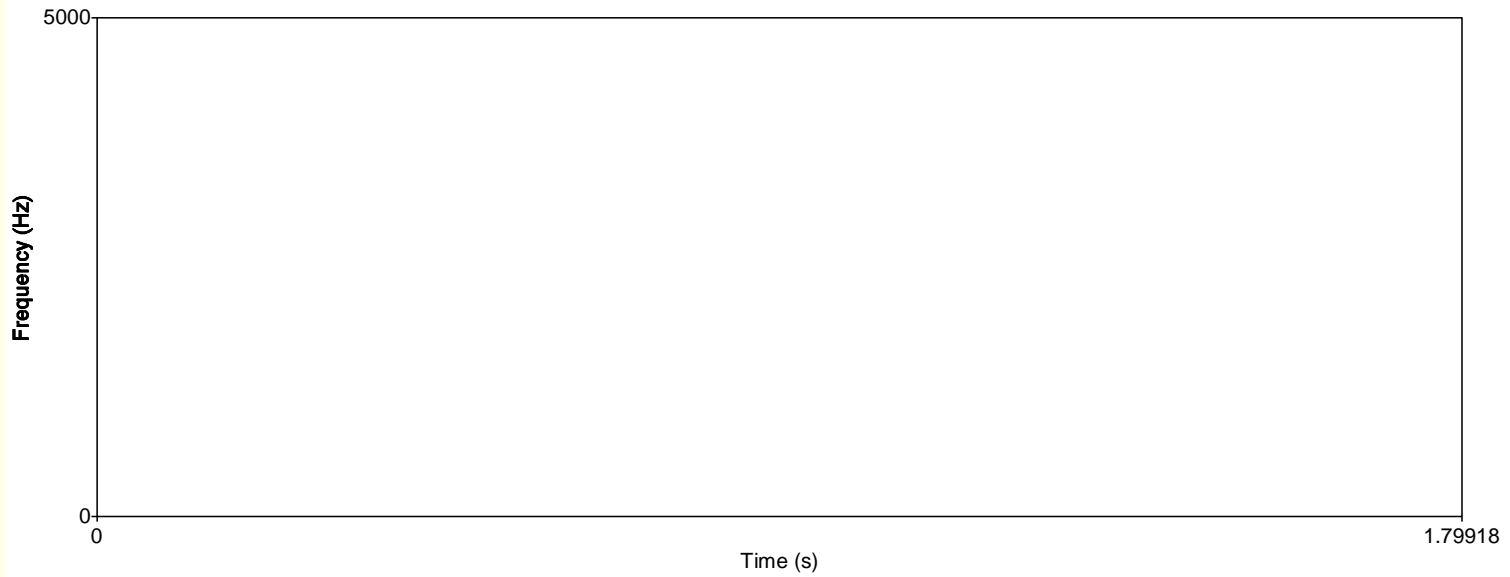
An expression with only the second formant

Frequency (Hz)

5000

0

0   1.80107

Time (s)
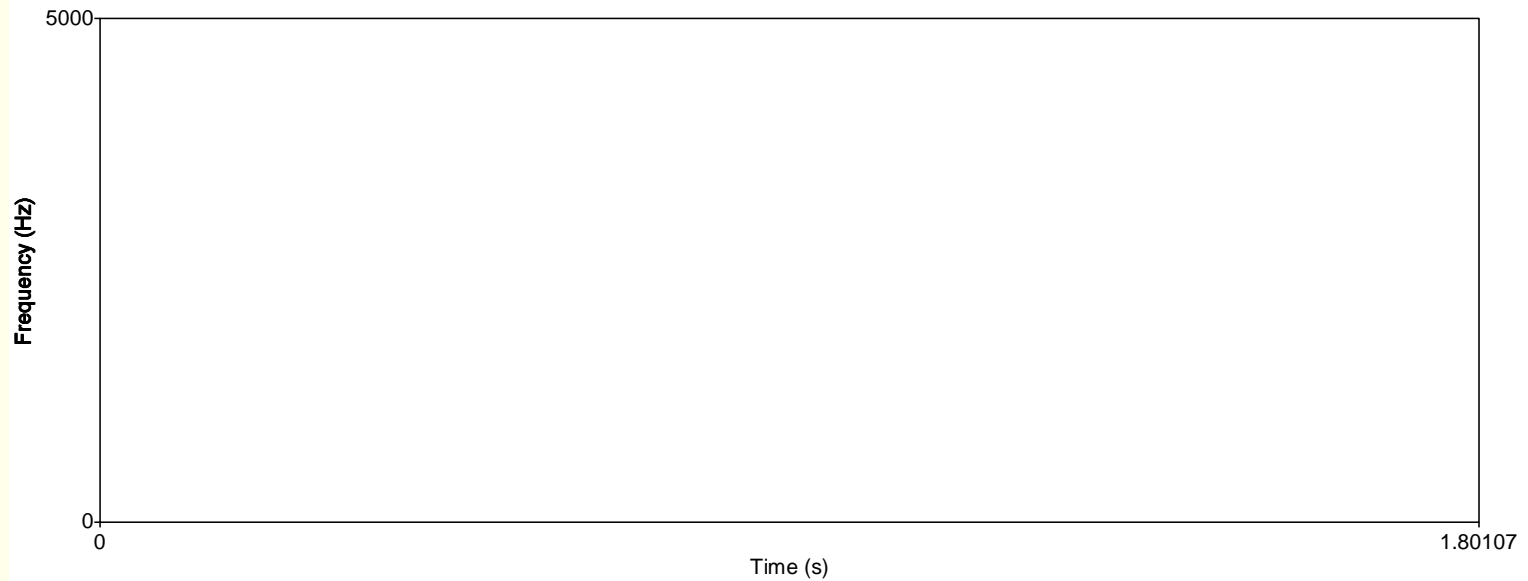
An expression with only the third formant

An expression with three formants but no F0
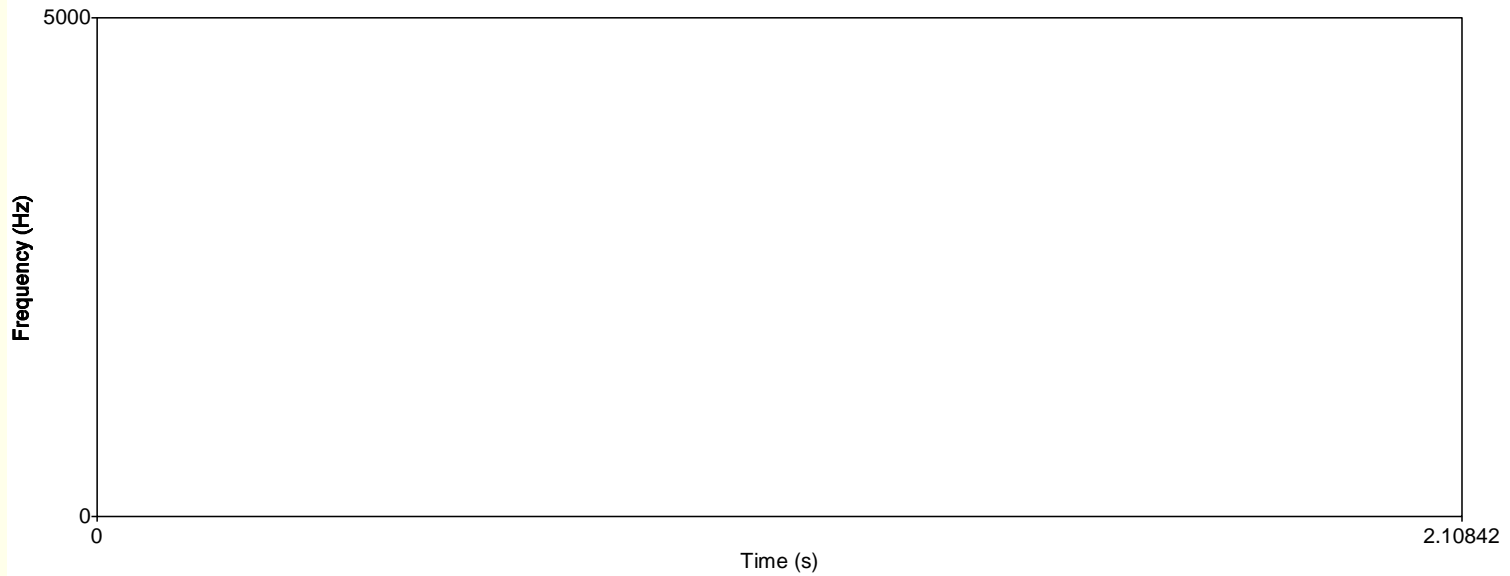
An expression with all formants

5000

Frequency (Hz)

0

0   2.10397

Time (s)
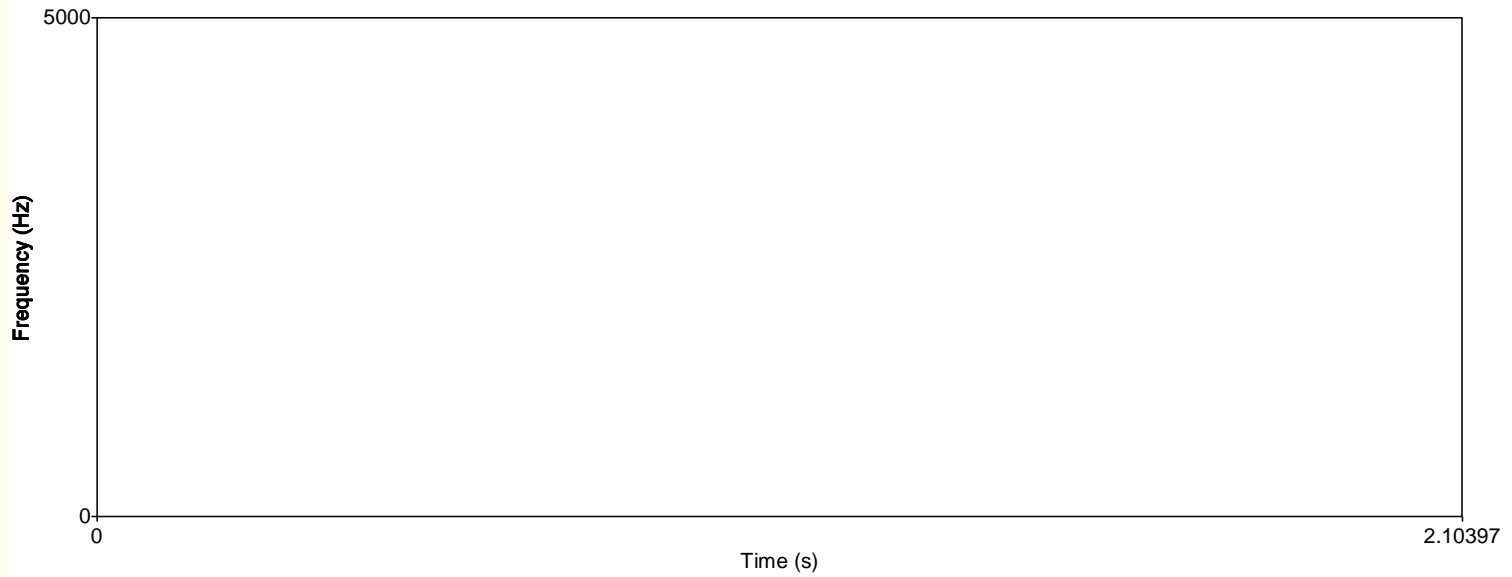
See also CBCAP

Articulatory and acoustic descriptions

See also PRAAT

A package of speech analyzer

Step 1: get the software package

Step 2: record sound or download sound

Step 3: segment the sound and keep the vowel

Step 4: use the "formant & LPC" format

Step 5: draw the scatterplot

Step 6: copy and paste the chart

Demonstrate PRAAT

Try to find the frequencies of F1 and F2 and locate the space for the following vowels:
heed, hid
hade, head
low, law

3500

0

1500
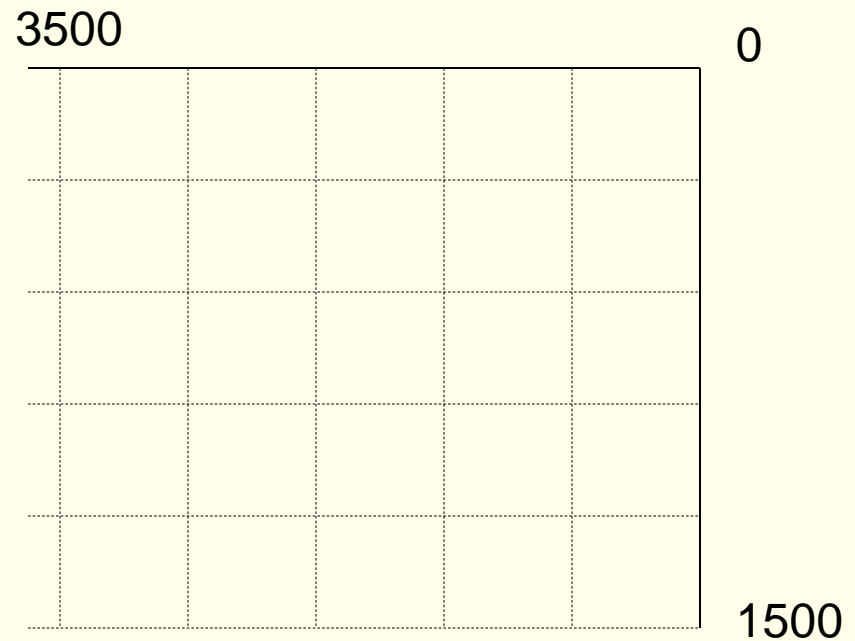
Try to scatterplot the following sounds

heed (F1 = 420, F2 = 3082)

hid (F1 = 615, F2 = 2437)

hade (F1 = 539, F2 = 2741)

head (F1 = 843, F2 = 2134)

low (F1 = 653, F2 = 1489)

law (F1 = 805, F2 = 1261)

The vowel space of /i, ɛ, æ, ɑ, ɔ, u/ (by an AES)

(with the frequency of the first formant on the vertical axis and the frequencies of the second formant on the horizontal axis)

The VS of /i, ɛ, æ, ɑ, ɔ, u/ (by an AES at UCLA)
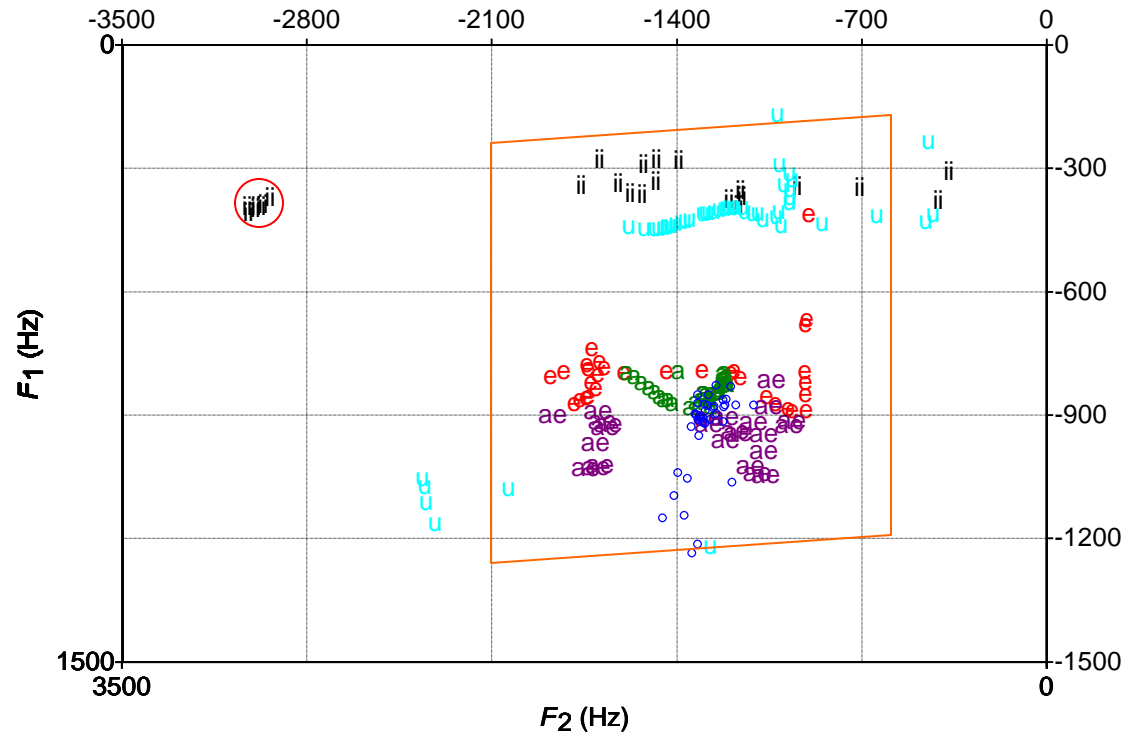
The VS of /i, ɛ, æ, ɑ, ɔ, u/ (by an AusES)
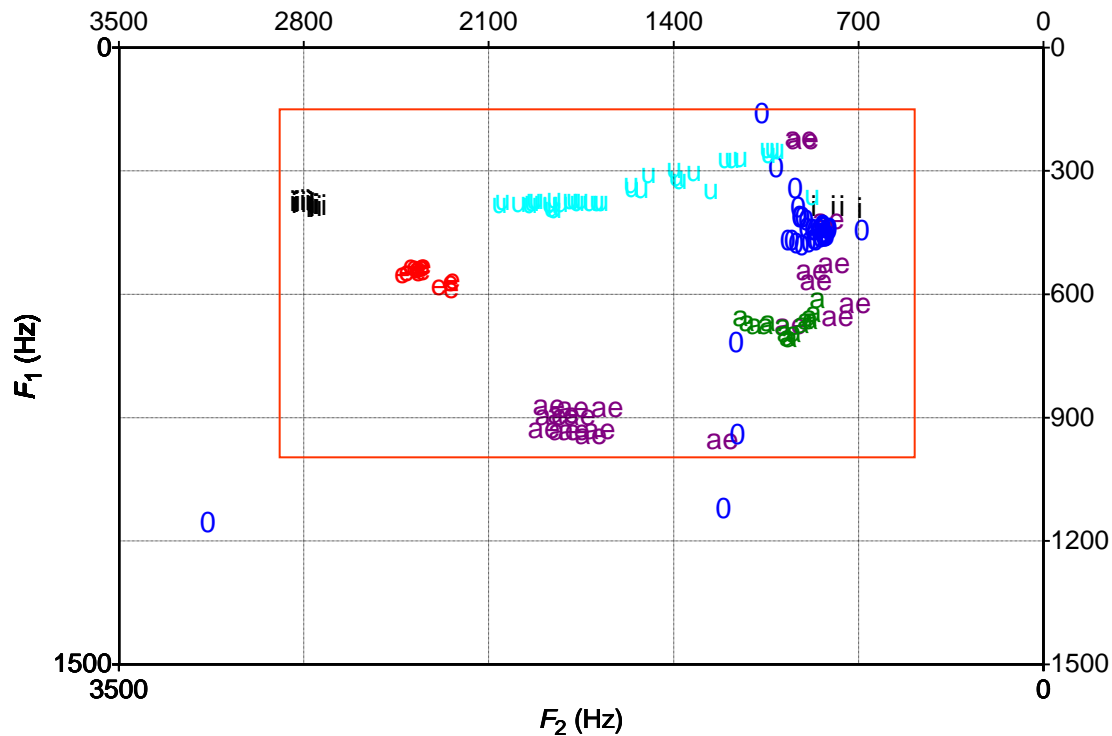
(The vowel is extracted from heed, Ed, hat, odd, law, who)

The vowel space of /i, ε, æ, α, ɔ, u/ (by a MS)
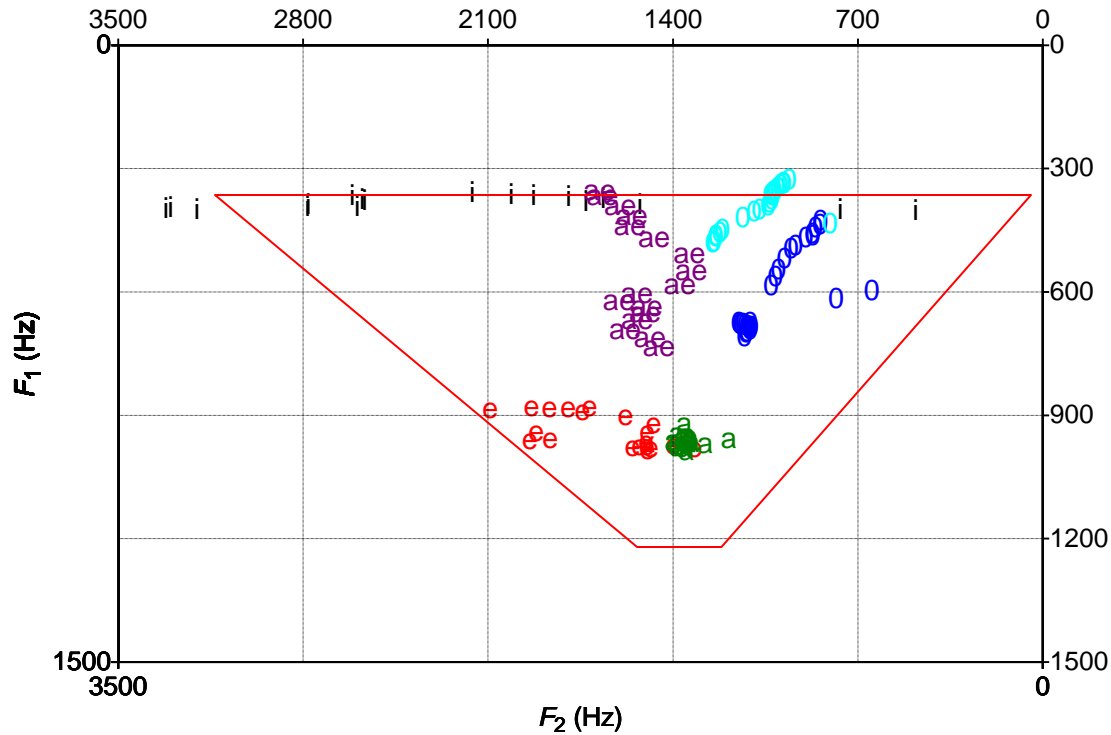
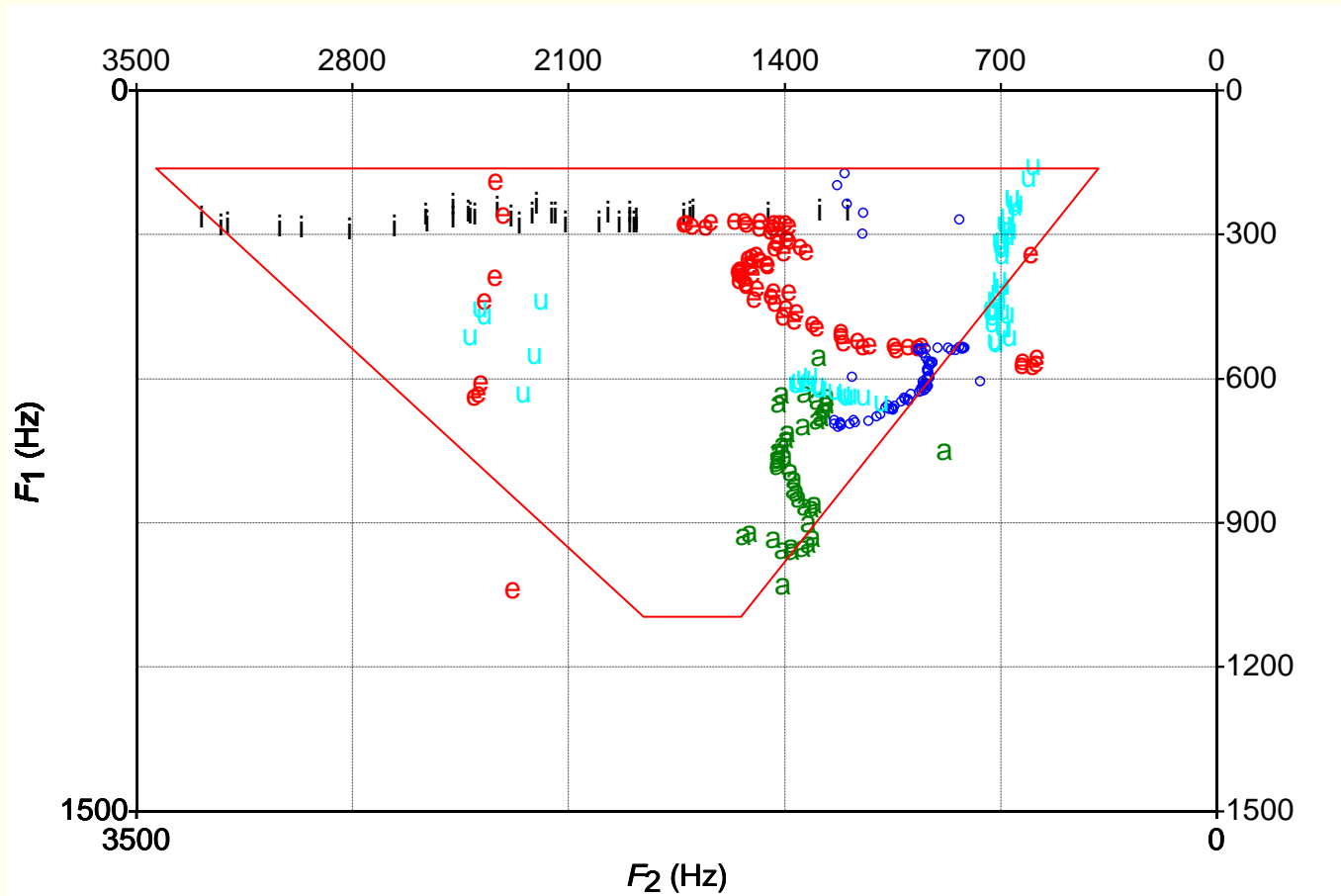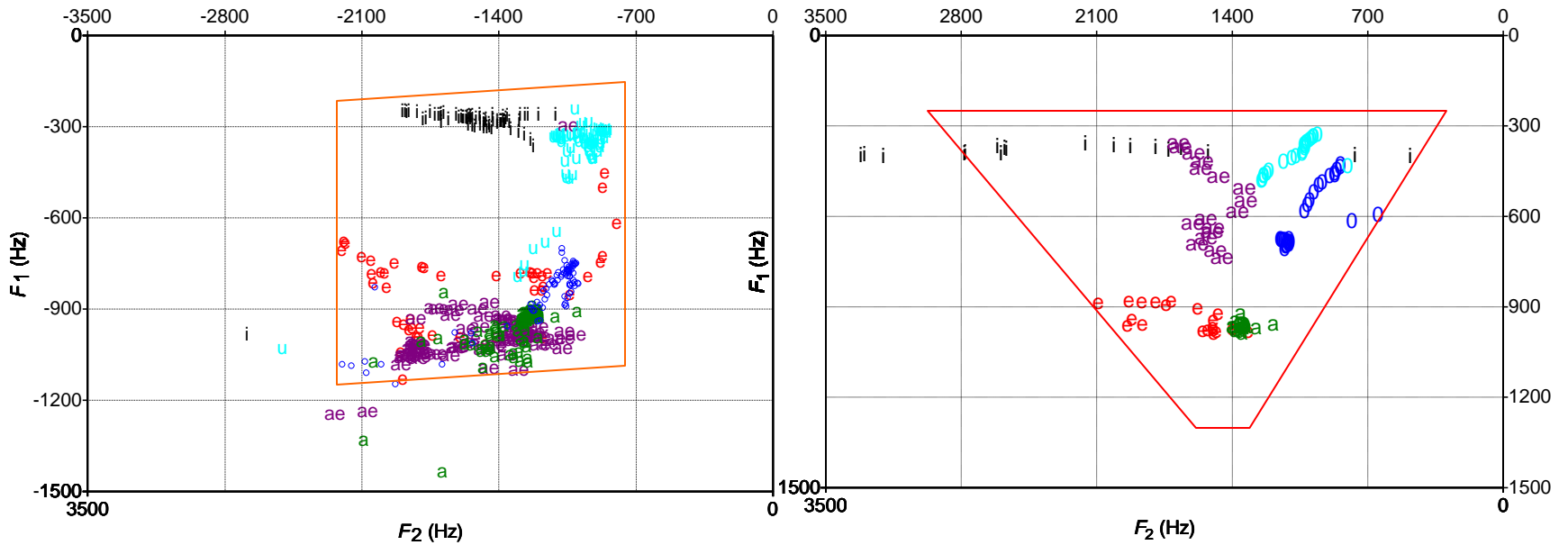(The vowel is extracted from heed, Ed, hat, odd, law, who)

The VS of /i, ɛ, æ, ɑ, ɔ, u/ (by another MS)
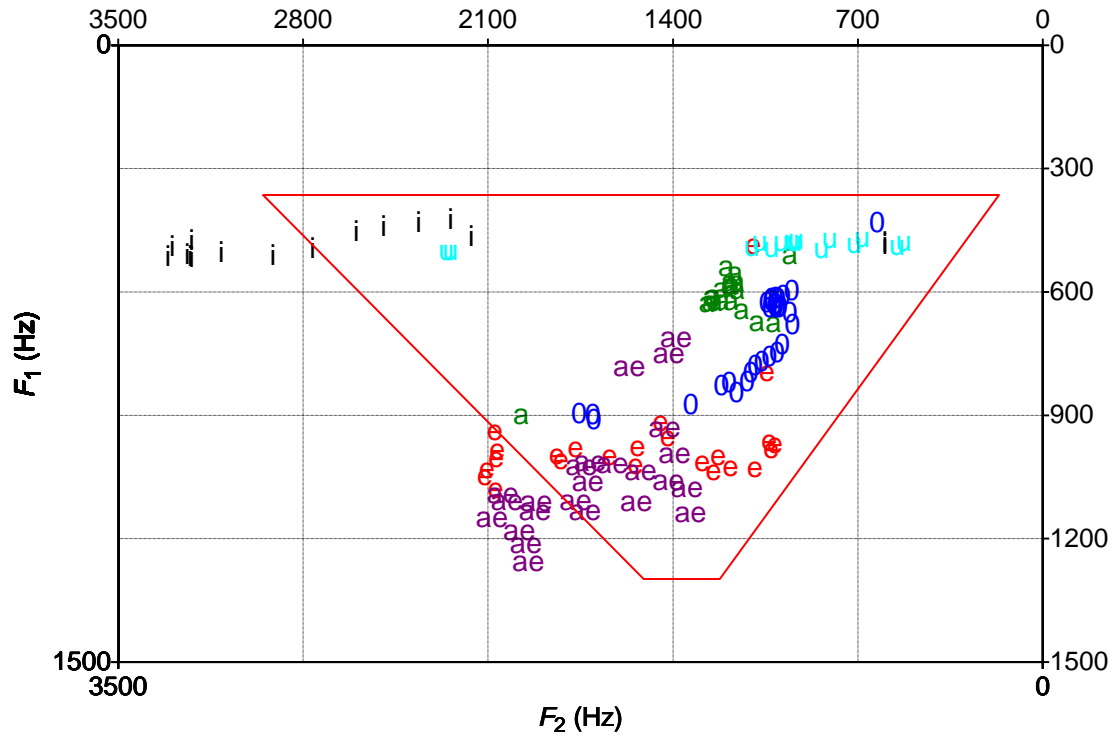
(The vowel is extracted from heed, Ed, hat, odd, law, who)
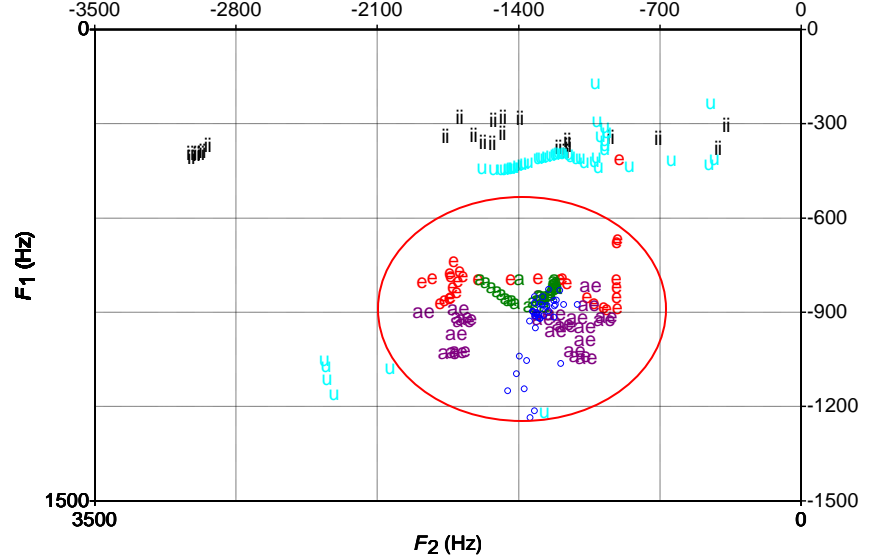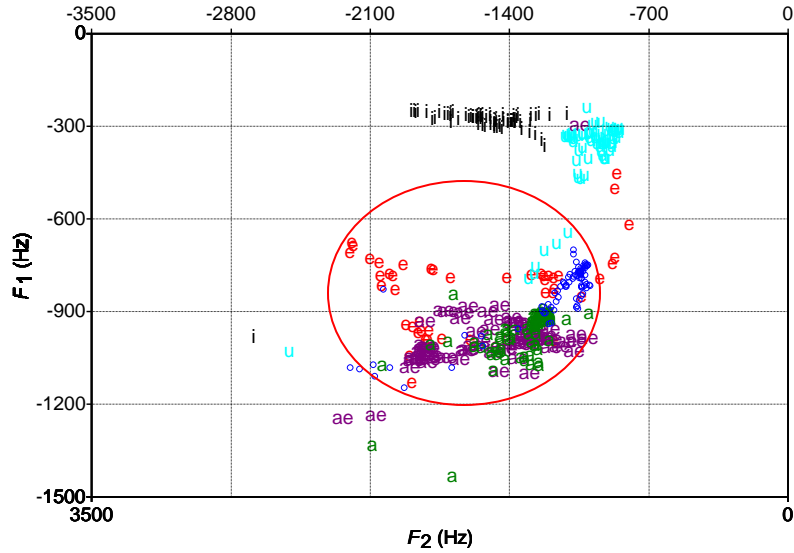
The vowel space of /ㄧㄝㄚㄛㄨ/ (by a MS)

Contrasting the charts by an AES and a MS
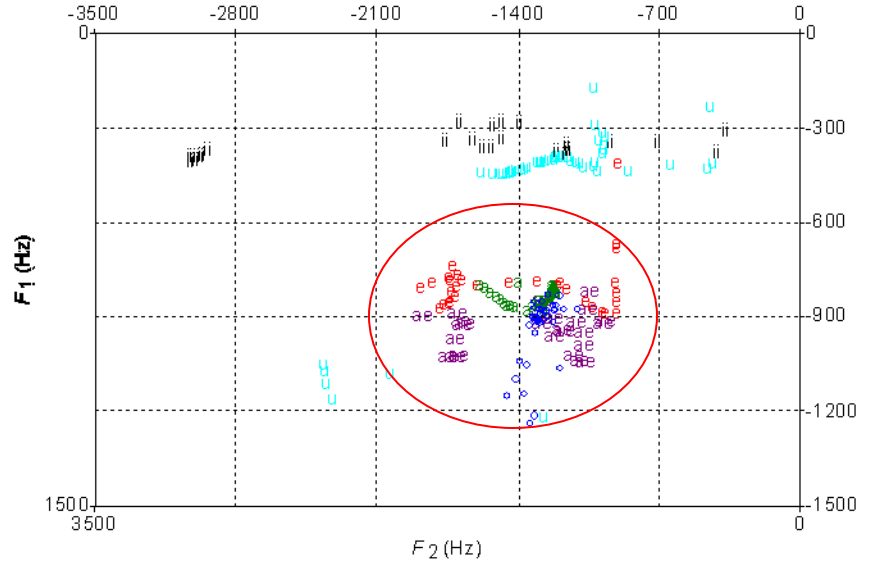
Comparing the charts by two AESs

27

The charts produced by an ES & a MS

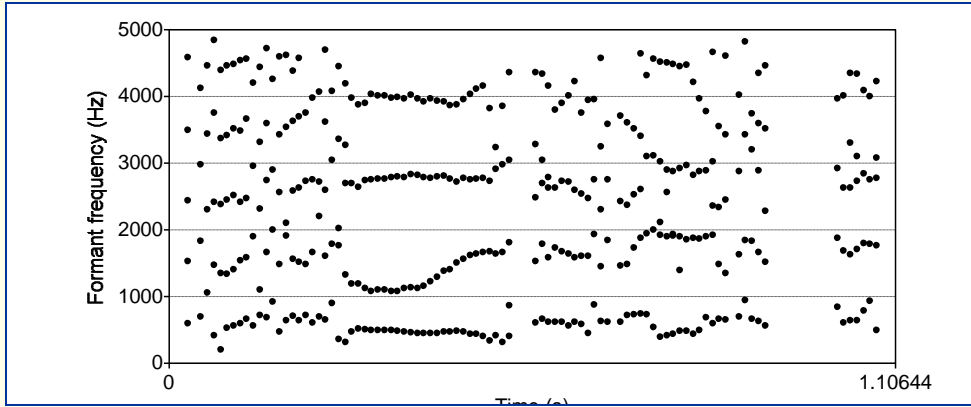# The charts produced by two ESs
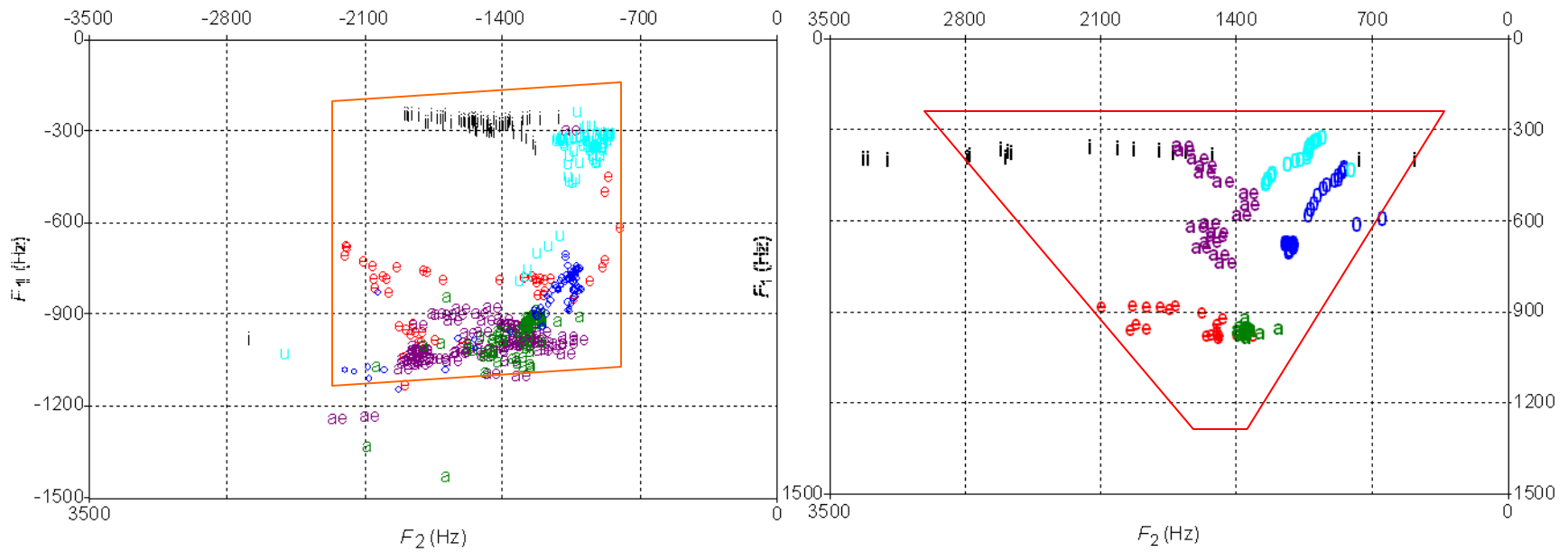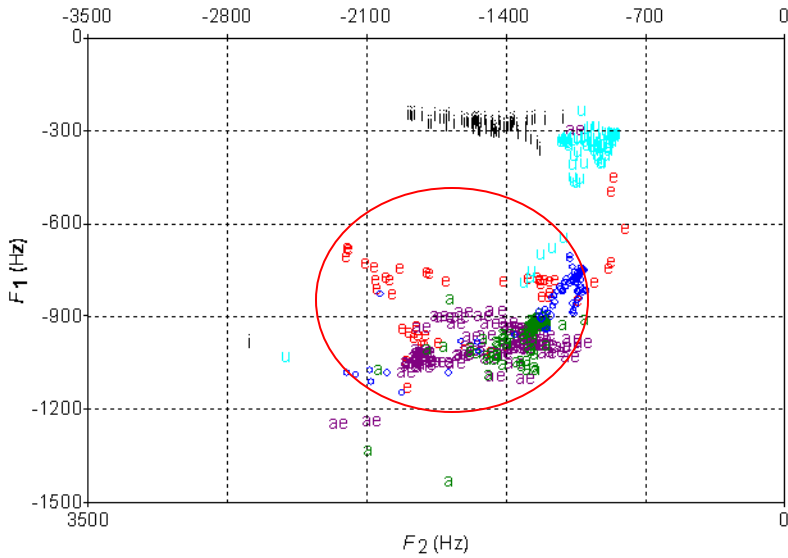
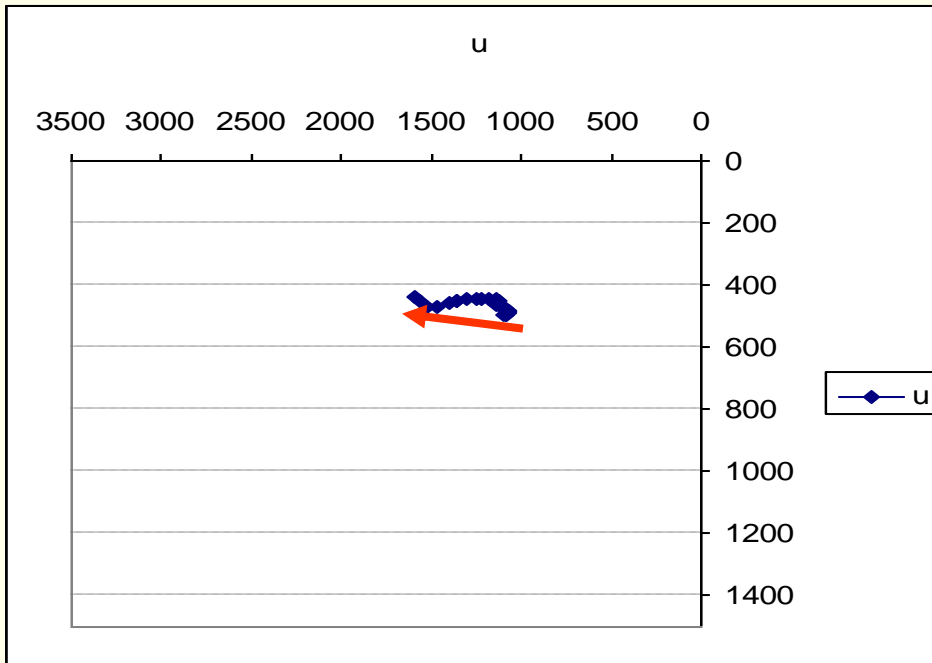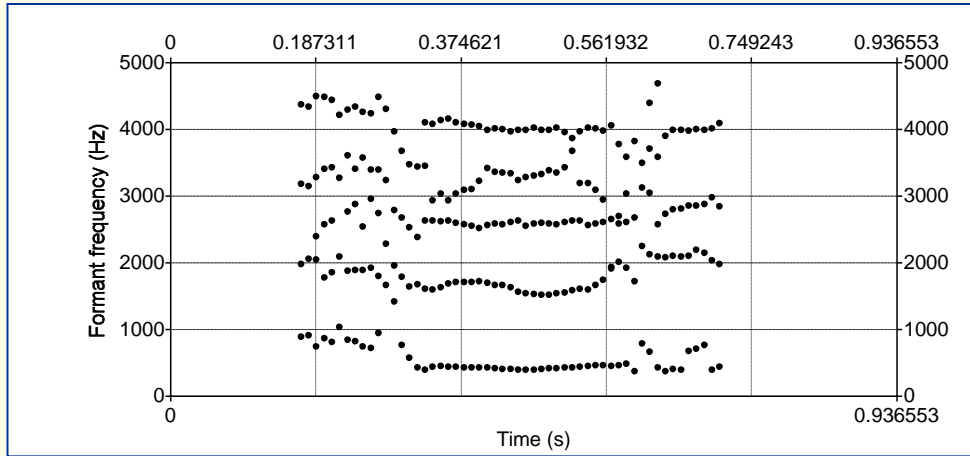# How to detect the vowel movement?
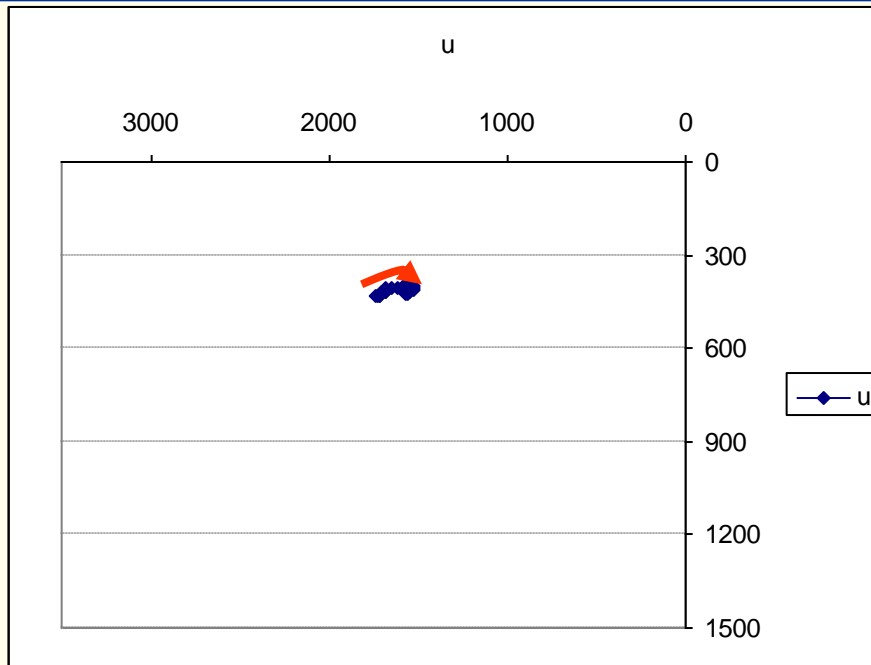

The spectrogram of "food" by an EFL student

The course of /u/ in "food" by an EFL student

How to detect the vowel movement?

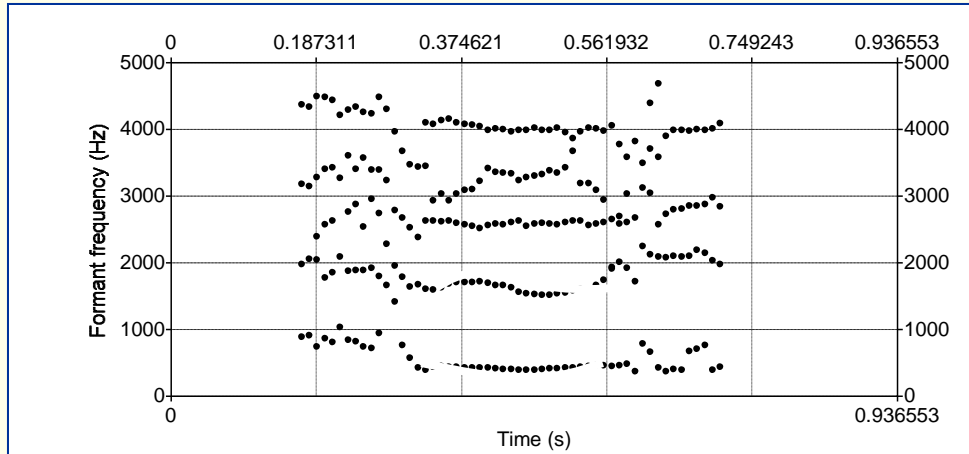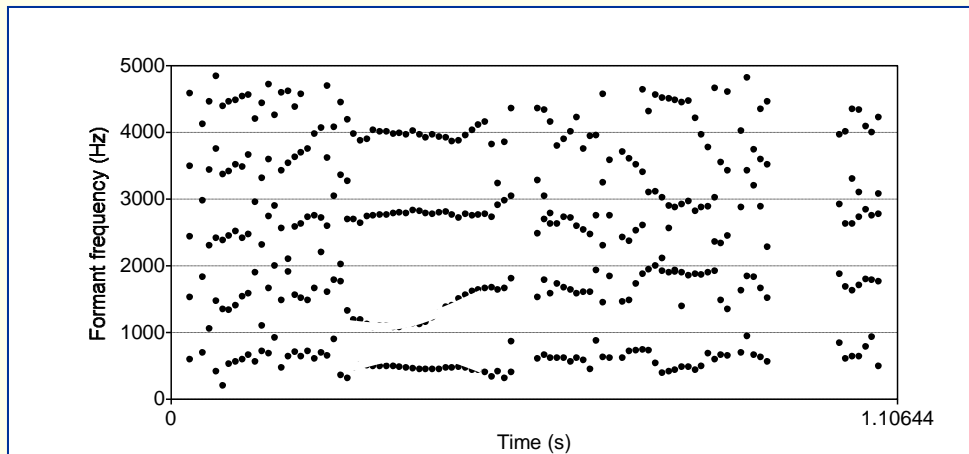The spectrogram of

"food" by a native speaker

The course of /u/ in

"food" by a native speaker

How to detect the vowel movement?
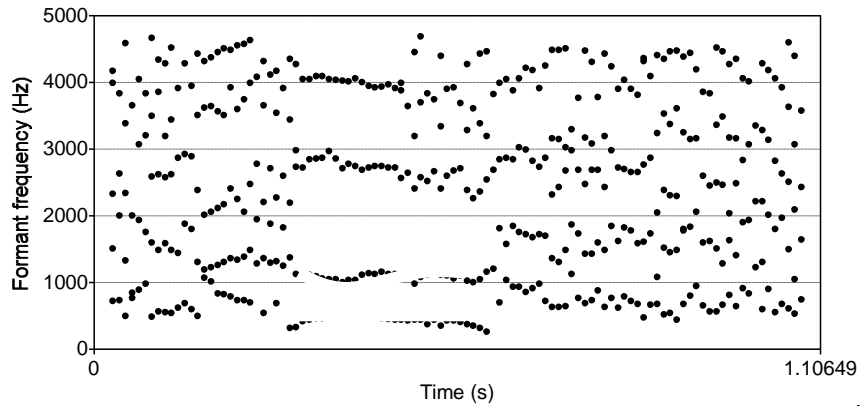

The spectrogram of "food" by a native speaker
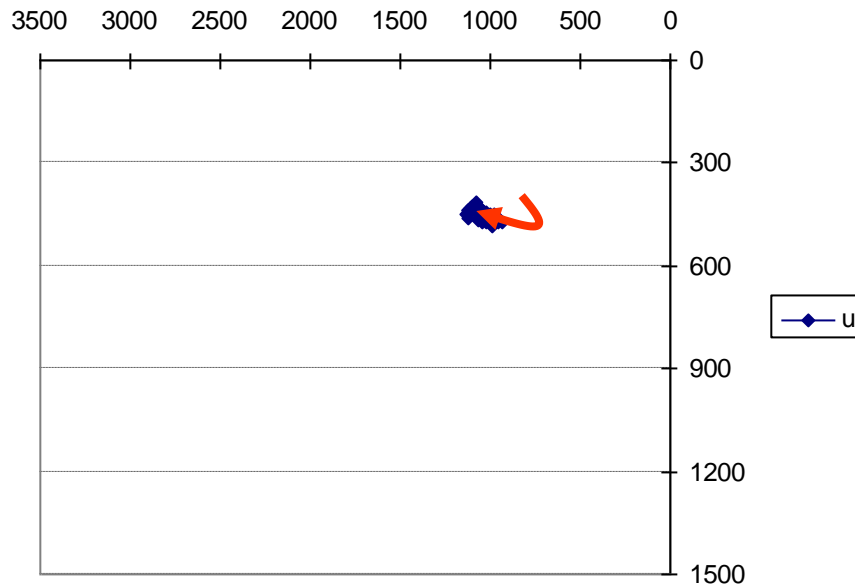

The spectrogram of "food" by an EFL student

How to detect the vowel movement?
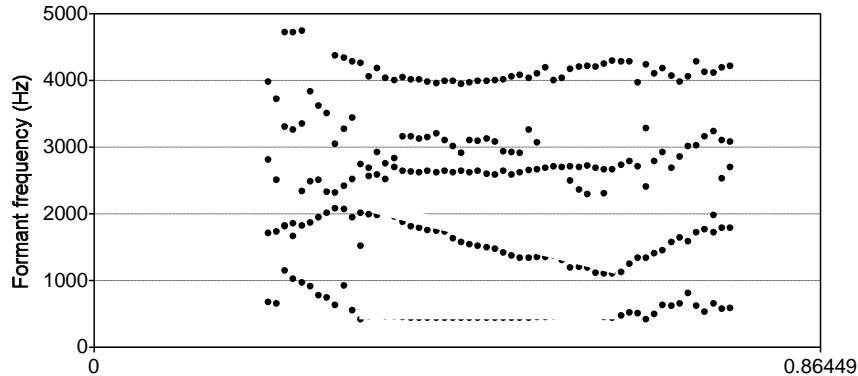

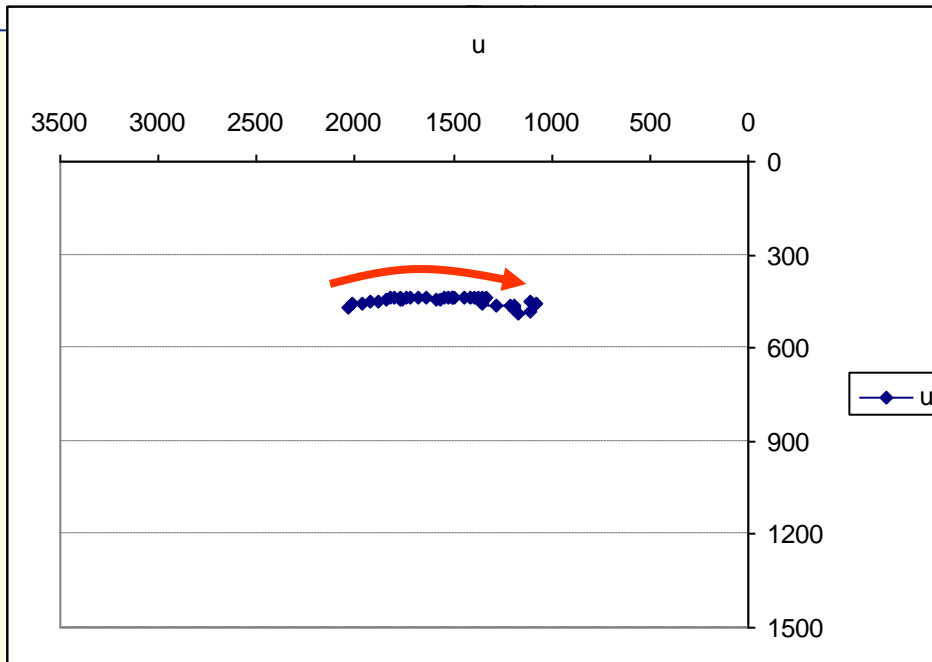The spectrogram of /u/ in "coo" by an EFL student

The course of /u:/ in "coo" by an EFL student

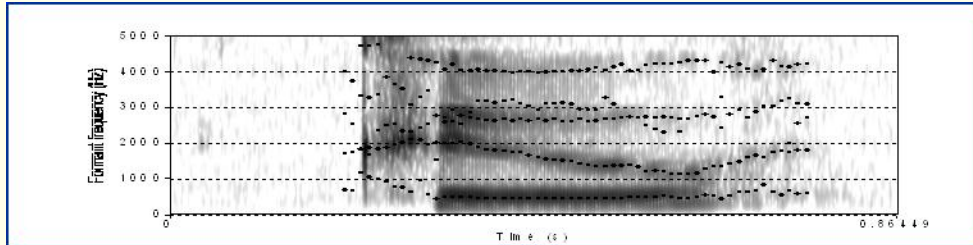# How to detect the vowel movement?

The spectrogram of /u/ in "coo" by a native speaker

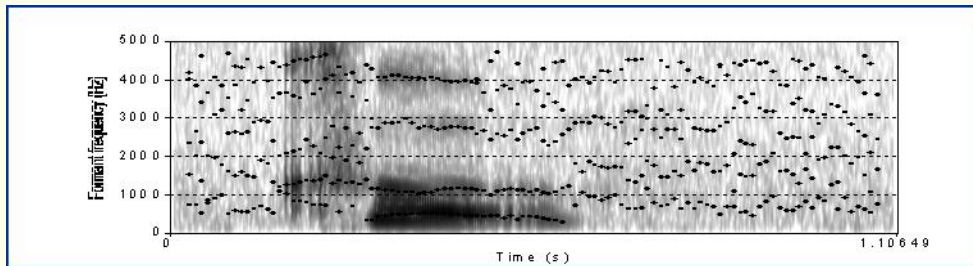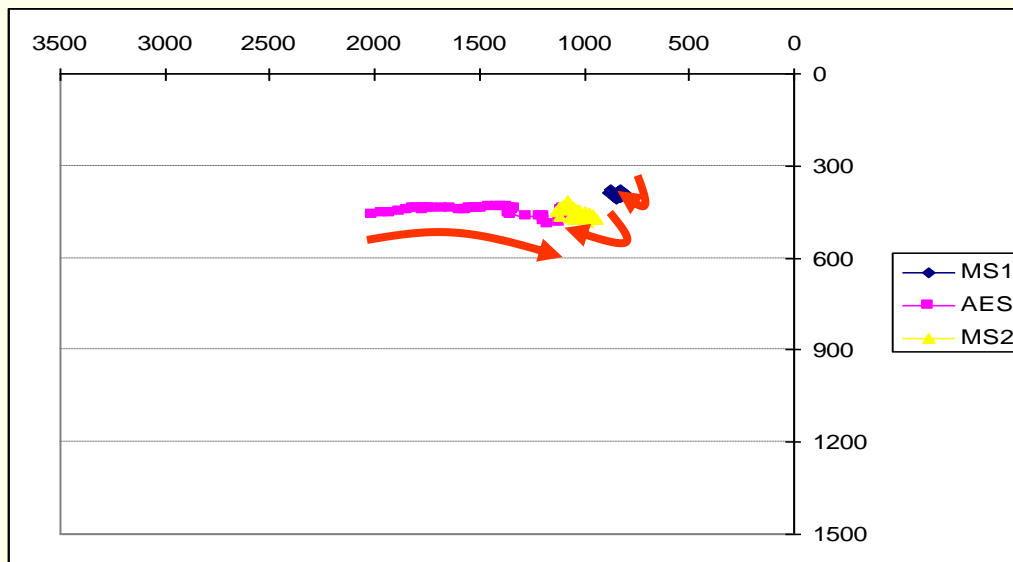The course of /uː/ in "coo" by a native speaker

Contrasting the vowel movements of /u/

The spectrogram of "coo" by a native speaker

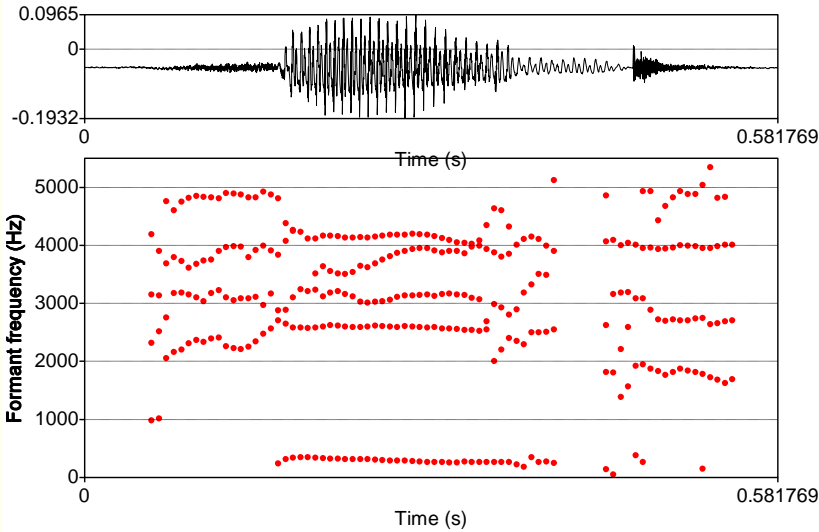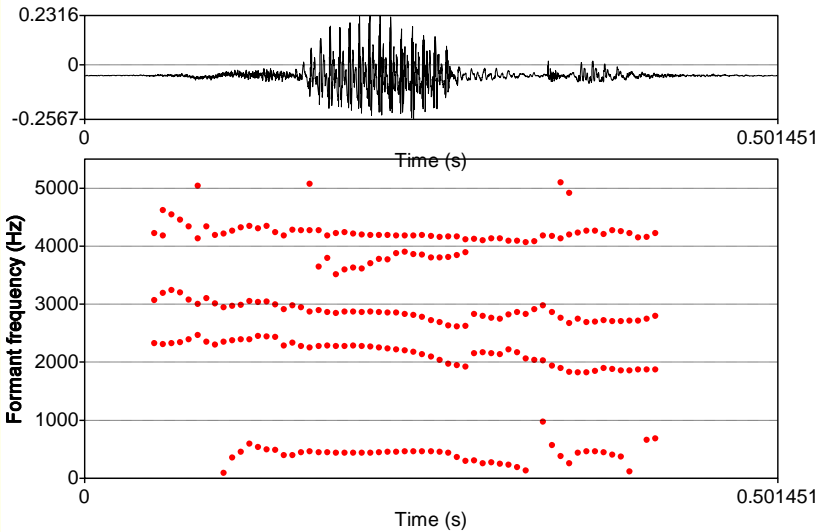The spectrogram of "coo" by an EFL student

Heed (BrE, male)

Hid (BrE, male)

How to specify the courses of the sound

heed	
F2_Hz	F1_Hz
2592.63	327.716
2618.97	321.508
2612.36	316.676
2595.07	311.975
2587.4	311.988
2585.36	313.504
2599.4	309.642
2610.34	303.753
2605.49	294.567
2597.52	286.824
2592.86	284.355
2602.83	288.197
2600.52	278.069
2592.37	268.937
2584.6	264.638
2587.2	266.518
2566.75	263.173
2564.95	254.349
2559.38	253.779
2540.8	268.664
2539.32	266.631
2526.09	263.182

hid	
F2_Hz	F1_Hz
2276.86	435.417
2280.98	434.813
2273.63	435.438
2261.52	439.063
2250.09	445.467
2227.19	450.925
2220.06	457.876
2198.29	465.437
2167.42	462.645
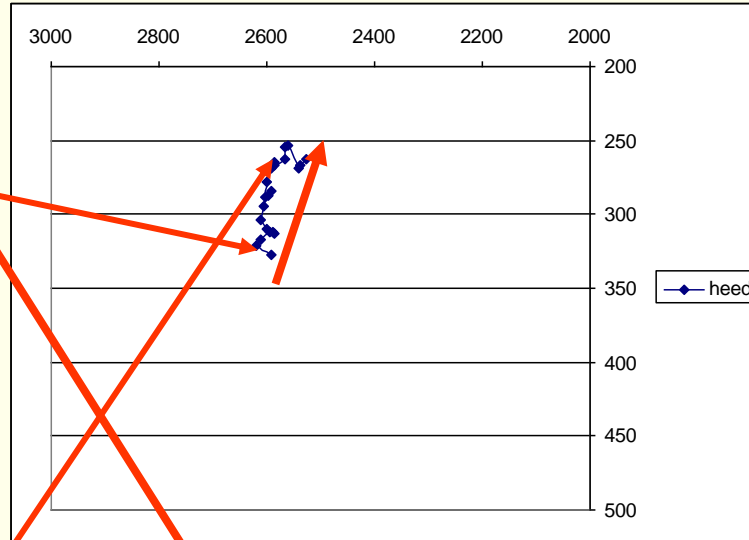
Heed

(BrE, male)
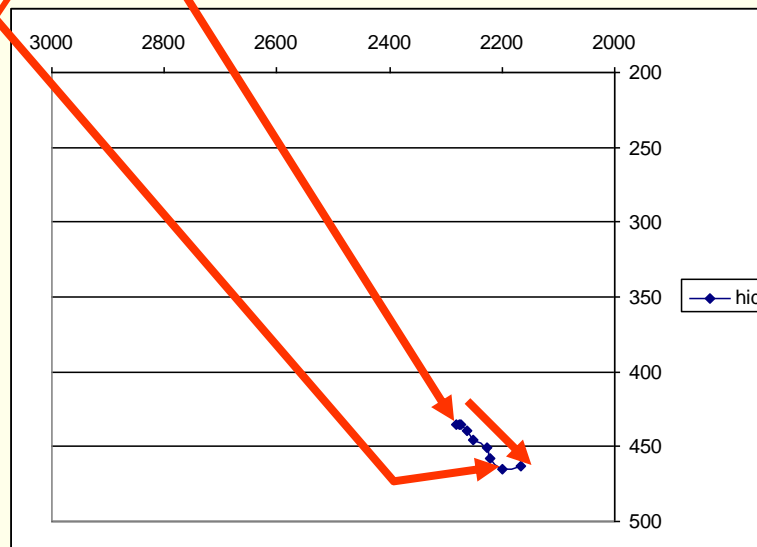
Hid

(BrE, male)

Directions — The vowel directions of Englishes
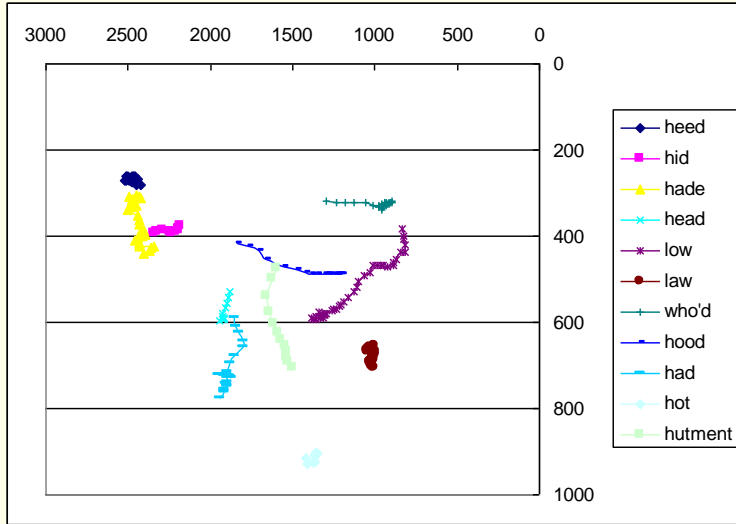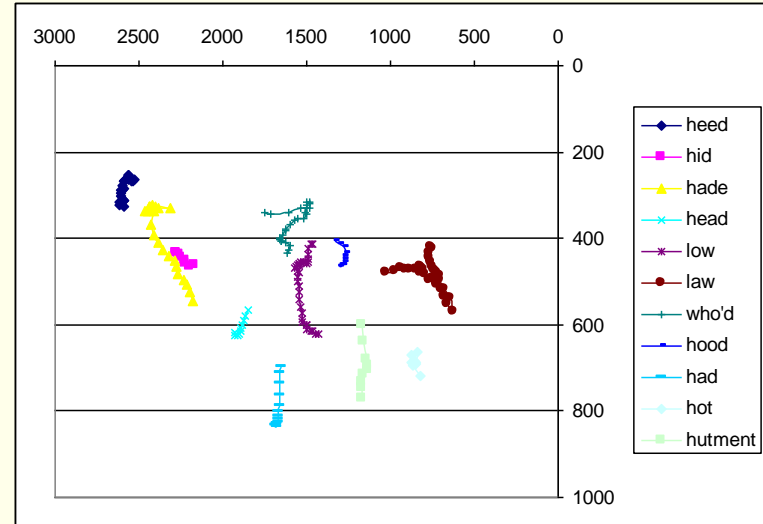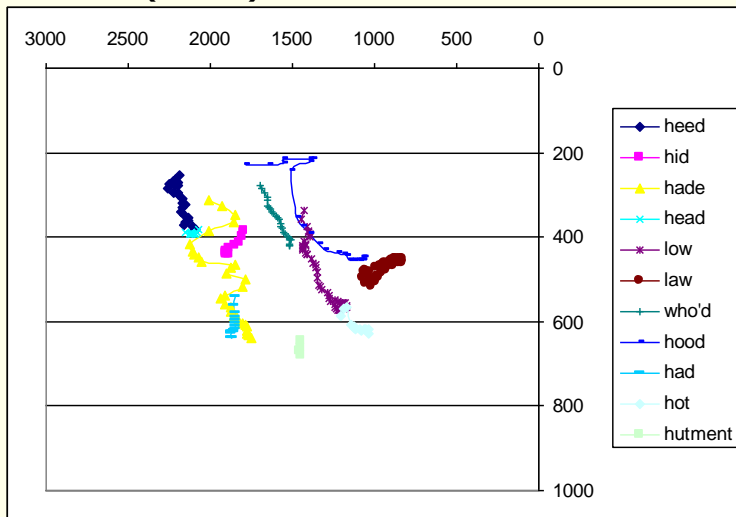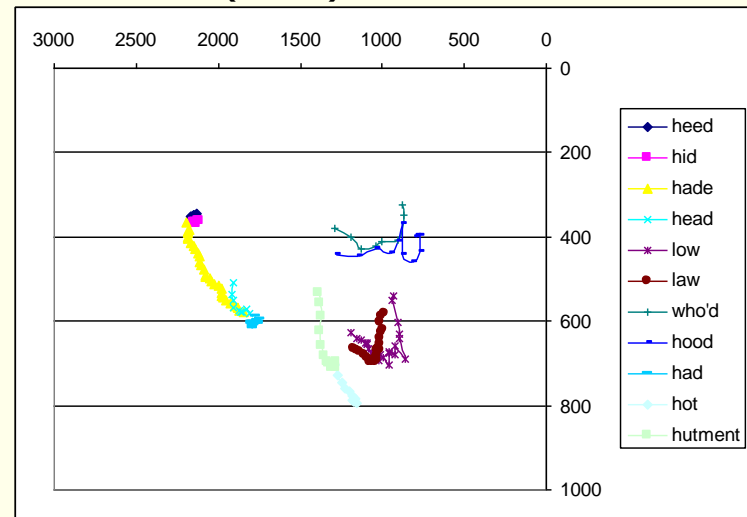
Contrasting *heed* and *hid*

AmE (male) *heed* vs. *hid*
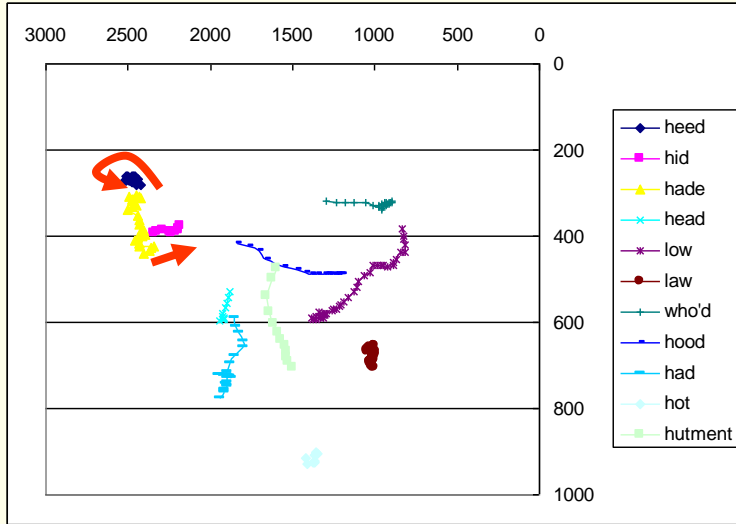
BrE (male) *heed* vs. *hid*
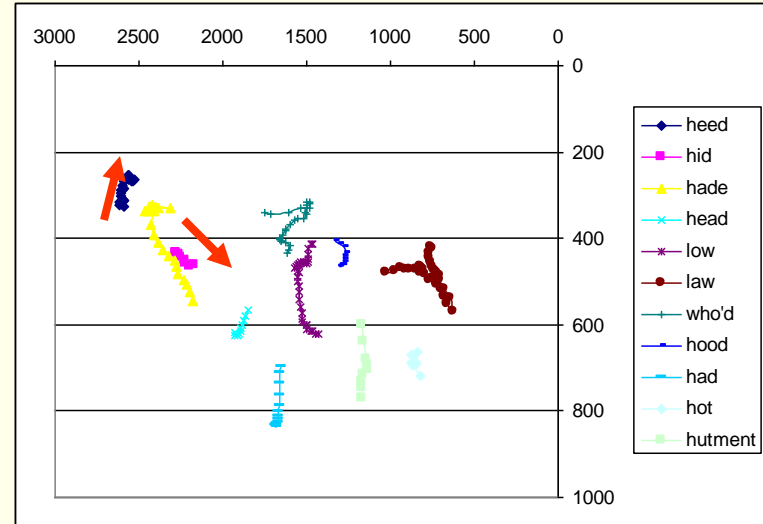
NZE (male) *heed* vs. *hid*
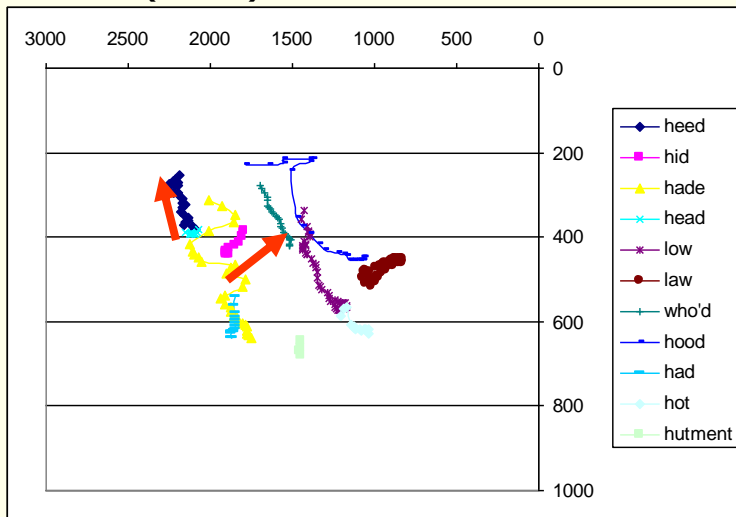
NTPU (male) *heed* vs. *hid*
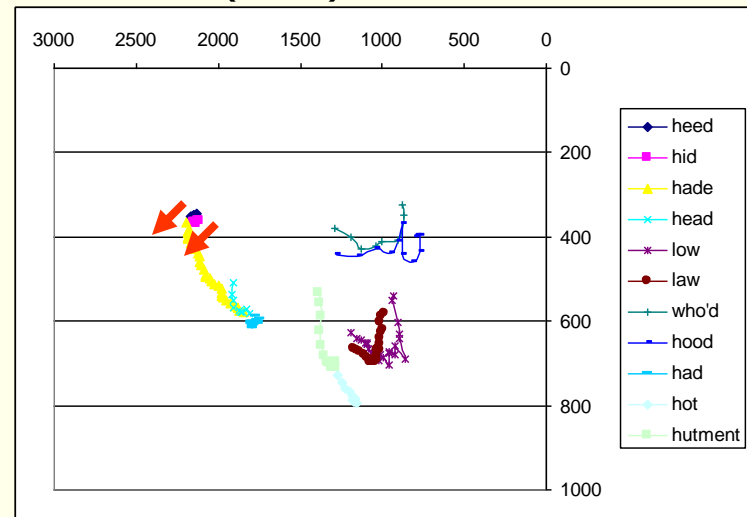
Contrasting *hade* and *head*

AmE (male) *hade* vs. *head*
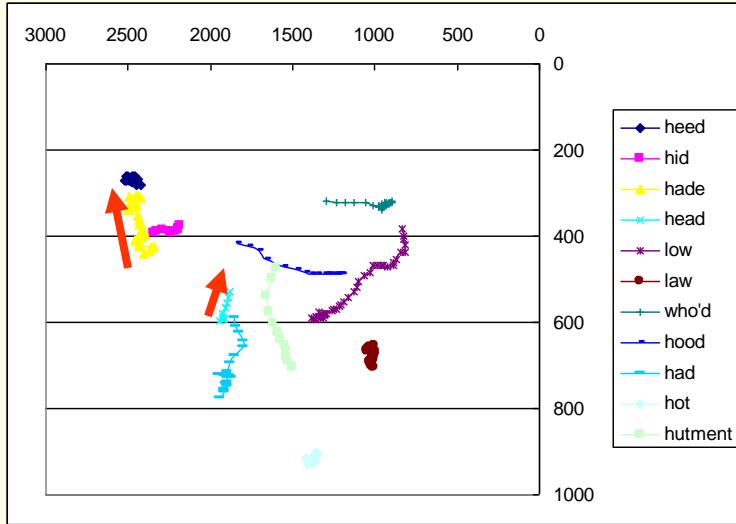
BrE (male) *hade* vs. *head*
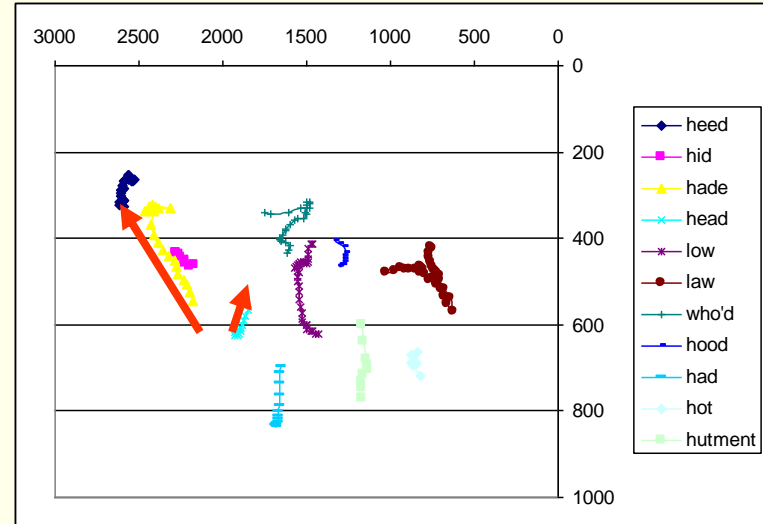
NZE (male) *hade* vs. *head*
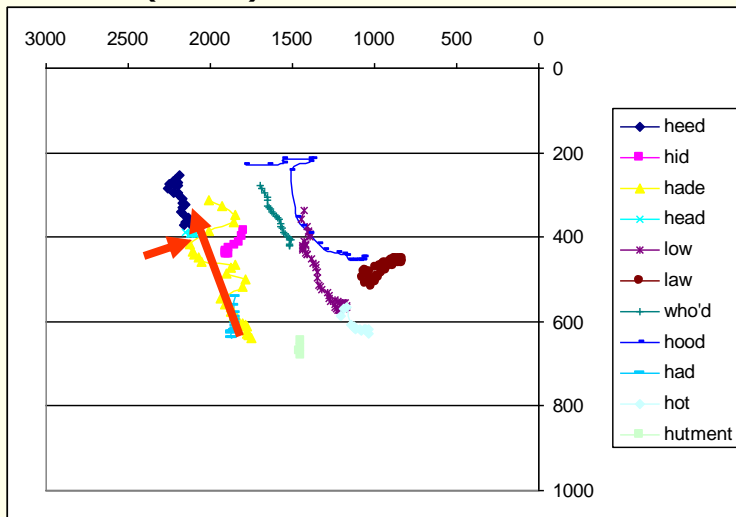
NTPU (male) *hade* vs. *head*
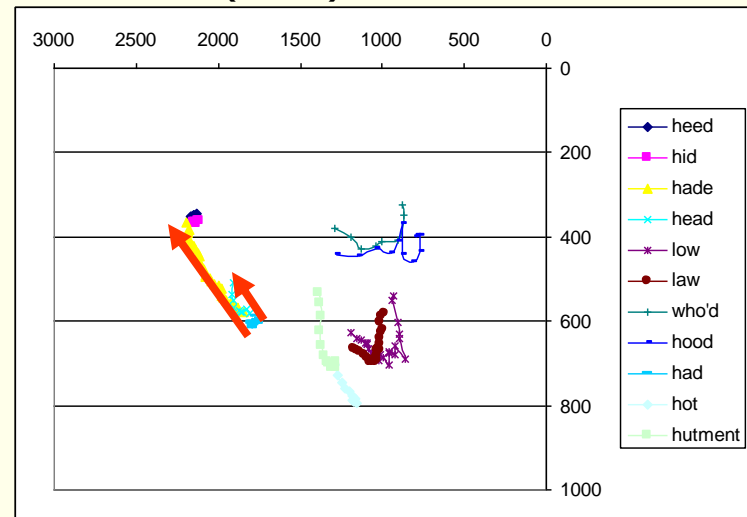
Contrasting low and law (considered a tense-lax pair here)

AmE (male) *low* vs. *law*
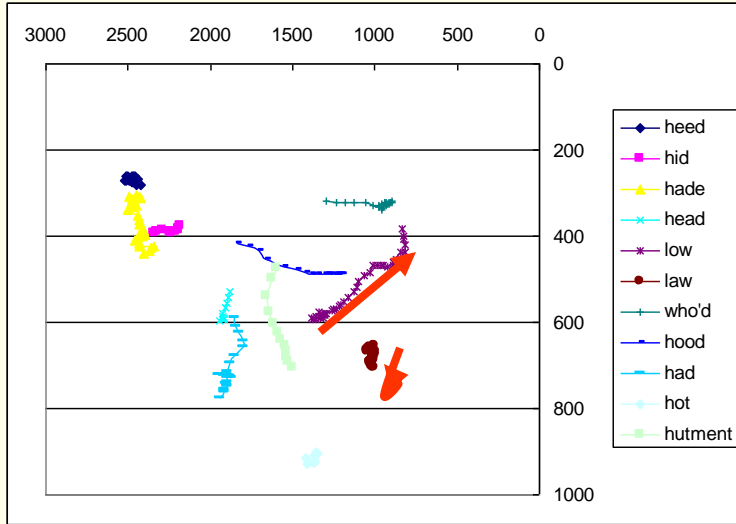
BrE (male) *low* vs. *law*
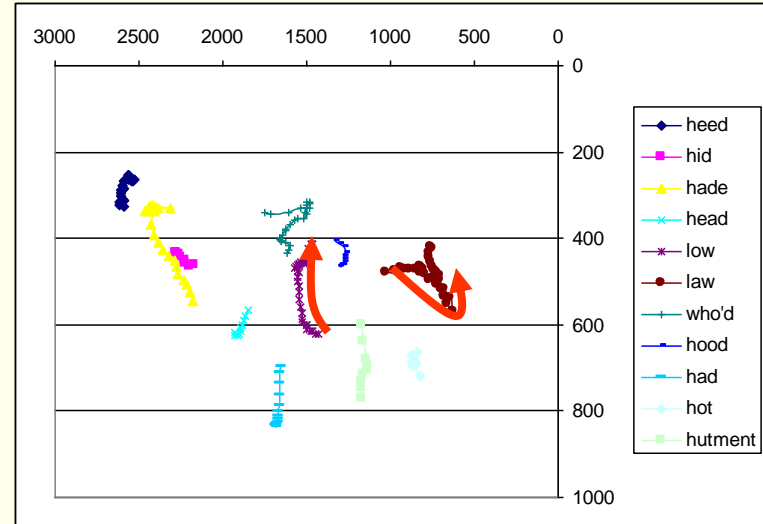
NZE (male) *low* vs. *law*
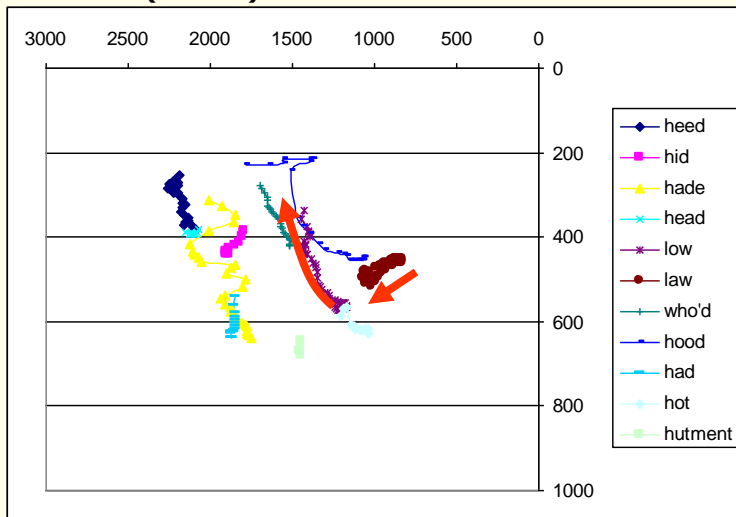
NTPU (male) *low* vs. *law*

Mechanism in the English phonemic system
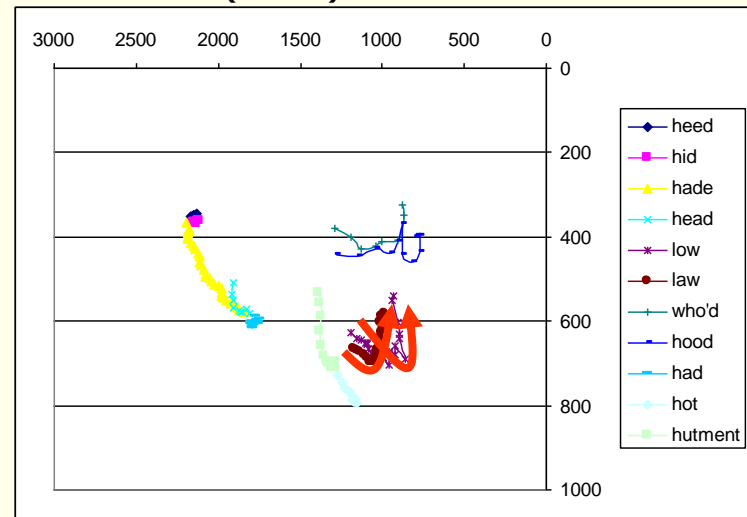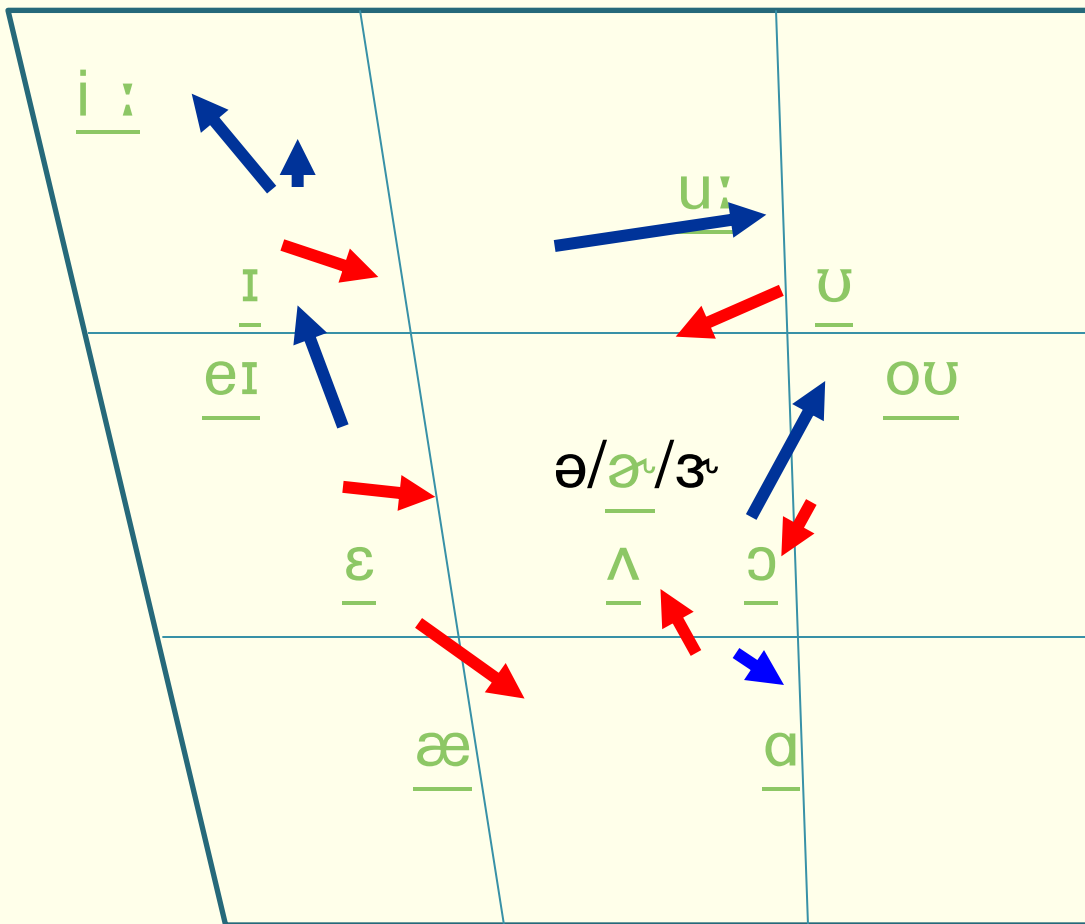
Locating the "vowel space" and get the true qualities of the vowel of American English
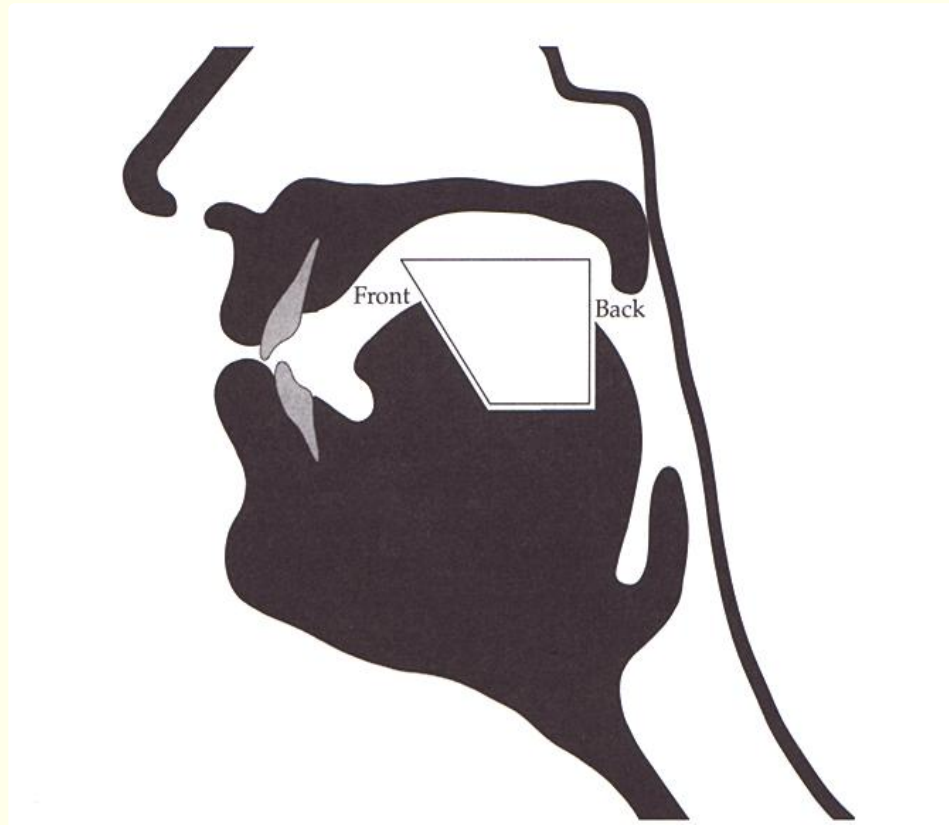
Try to pronounce the following vowels:
/iː, ɪ; eɪ, ɛ; æ; ɑ; ɔ, oʊ; ʊ, uː/

MRI graphs of oral tracts for vowels

/i/

Front

Back

/ɪ/

MRI graphs of oral tracts for vowels

/æ/

/ɑ/

MRI graphs of oral tracts for vowels
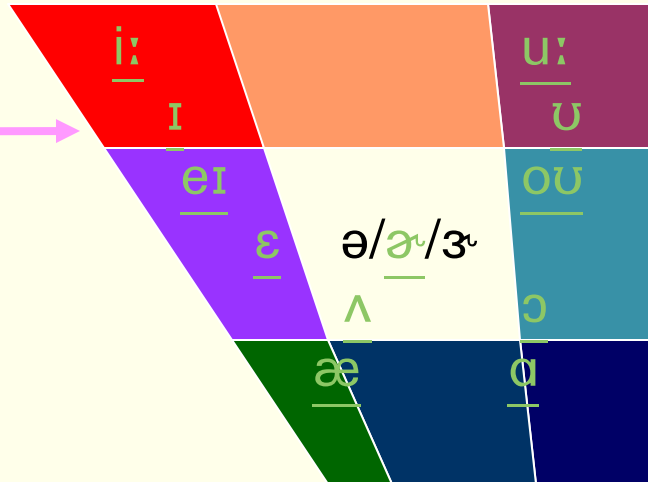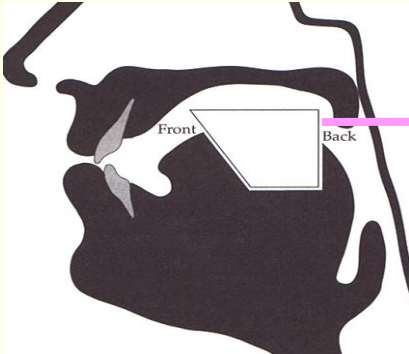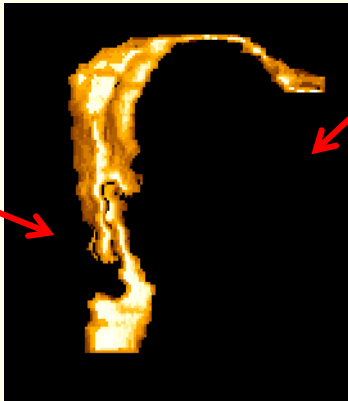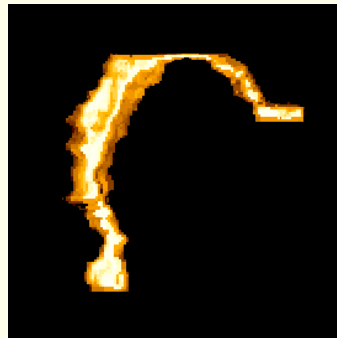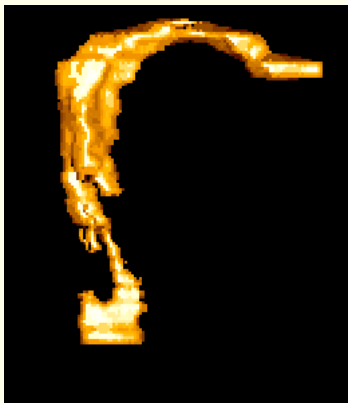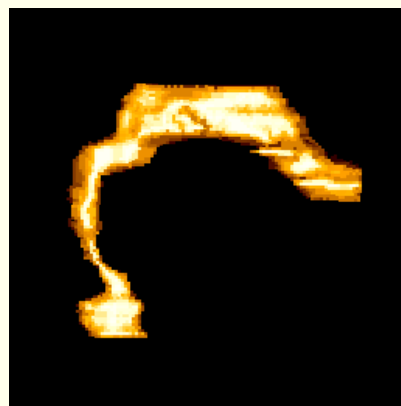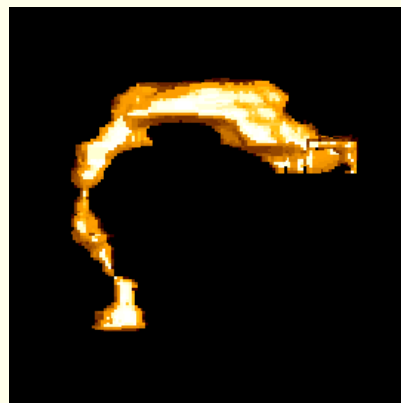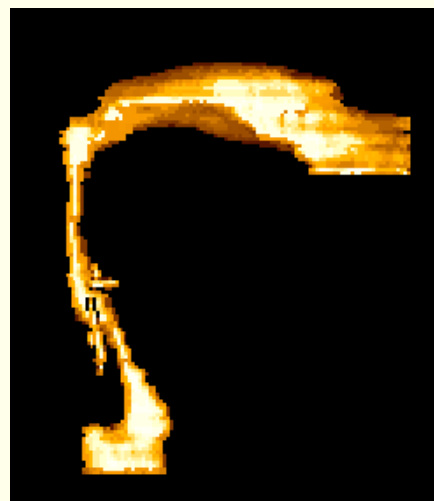
/o/

/u/
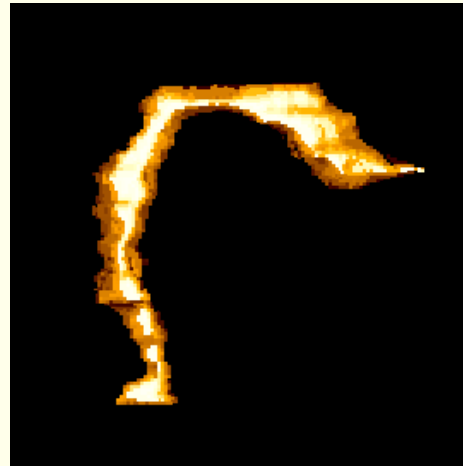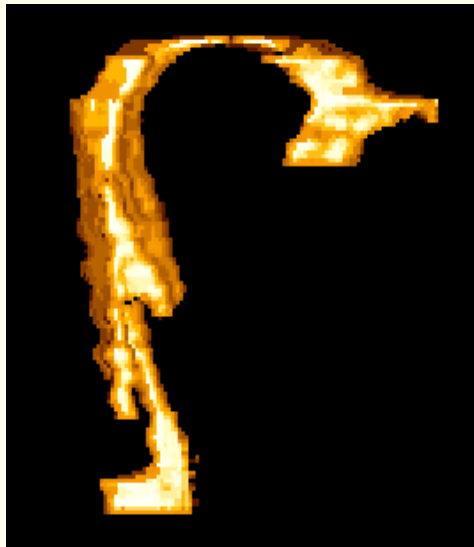
KK symbols: /i/ & /ɪ/

1. feet/fit   My feet don't fit

   /i/   /ɪ/
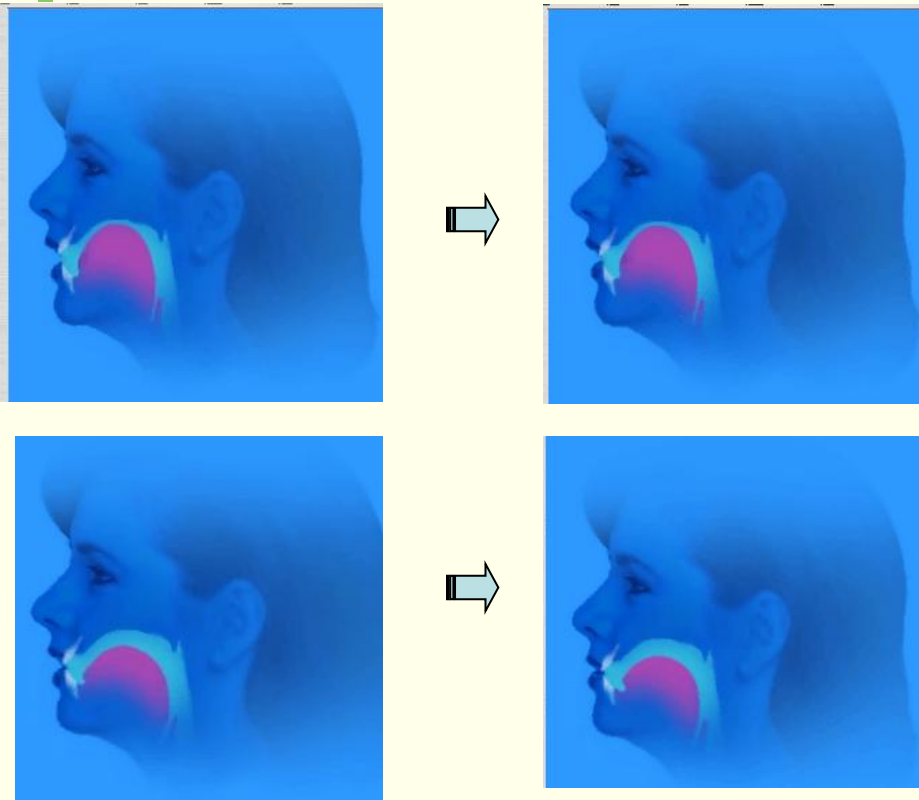
⊙**03** The vowel **/i/**

1. E ease eat
2. bee bead beat
3. D deed deep
4. tea tease teeth
5. fee feed feet

Sentences:
1. He sees the key point.
2. Please leave me in peace.

⊙**05** The vowel **/ɪ/**

1. is it
2. bid bit
3. did dip
4. middle little
5. minute visit

Sentences:
1. This kid is sick; he is shivering.
2. Give him six minutes to finish the quiz.

49

📹   [i]   [i] i   key   keys   keep   lead   leaf   see
📹   [ɪ]   [ɪ] ɪ   is   it   kiss   kid   lib   lip

Contrast /i/ and /ɪ/ (key)
1. is   ease
2. it   eat
3. did   deed
4. dip   deep
5. ship   sheep

Sentences:
🔊 1. At least you can give me a list.
    2. I know you live here, but you must leave tomorrow.
    3. The sheep are on the ship now.

KK symbols: /u/ & /ʊ/

4. food/foot   Don't put the food near your foot.

/u/   /ʊ/

⊙**19** The vowel **/u/**

1. ooo!   ooze   oops
2. do   boob   boot
3. flu   food   flute
4. too   tube   tooth
5. moo   mood   moot

Sentences:
 1. Sue bought a new suit.
 2. Which will you choose: food or juice?

⊙**20** The vowel **/ʊ/**

1. pull   push
2. pud(ding)   put
3. bull   book
4. full   foot
5. could   cook

Sentences:
 1. He looks like a good cook.
 2. A good-looking woman wants to buy the book.

[ʊ] [ʊ] ʊ   good   could   took   shook   book   put
[u] [u] u   goose   coo   loose   lose   food   boot

Contrast the vowels /ʊ/ and /u/
1. book   boot
2. pull   pool
3. foot   food
4. took   tool
5. good   goose

Sentences:
1. You need to choose a good cookbook.
2. The food looks good. Can you put it in my room?

KK symbols: /ɛ/ & /e/

2. let/late   He is late. Don't let him in.
    /ɛ/ /e/
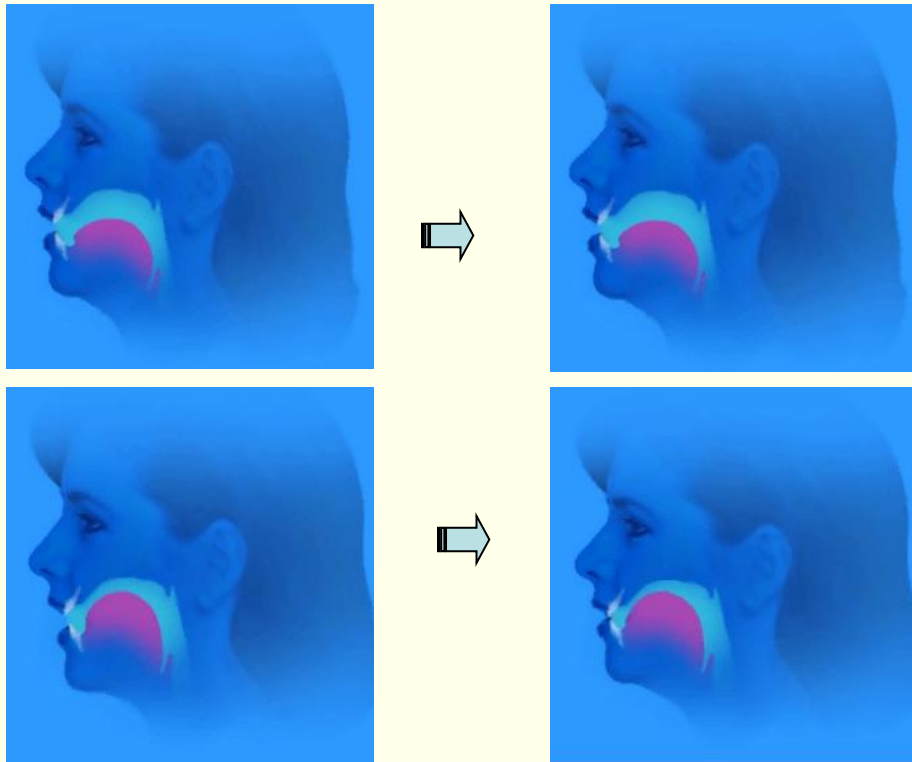
🔊 ⊙**07**   The vowel **/ɛ/**

1. egg   X
2. bed   bet
3. dead   debt
4. tell   tech
5. fed   fetch

Sentences:
1. The weather there is great.
2. The red pepper does not sell well in the west.

🔊 ⊙**08**   The vowel **/e/**

1. a   aid   eight
2. bay   bade   bate
3. day   days   date
4. stay   tail   take
5. Kay   cave   cake

Sentences:
1. They played all day.
2. What's your name? Are you James?

[eɪ][eɪ] e   say   sage   sake   may   make   made
[ɛ] [ɛ] ɛ   bet   bed   less   leg   red   wreck

Contrast /e/ and /ɛ/ (hate)
1. age   edge
2. bade   bed
3. mate   met
4. wait   wet
5. waste   west

Sentences:
1. I met my roommate yesterday.
2. Put the pepper on the paper.

KK symbols: /ɔ/ & /o/

3. bought/boat   He bought a boat yesterday.
    /ɔ/   /o/

Practice: pairs of /ɔ/ & /o/
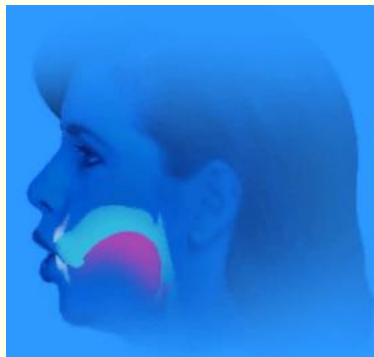
🔊 **16** The vowel **/ɔ/**

1. audit   ought
2. pause   bought
3. daub   daughter
4. taw   taught
5. cause   caught

Sentences:
1. You ought to sit in and audit the course.
2. He bought some chalk for his daughter.

🔊 **17** The vowel **/o/**

1. oh   ode   oat
2. bow (*n.*) bode   boat
3. foe   vogue   vote
4. toe   toad   toke
5. go   goad   goat

Sentences:
1. This is an old show about a goat.
2. He told me that it was cold outside and gave me the coat.

[ɔ] [ɔ] ɔ   caught cause law   saw   bought all
[oʊ][əʊ] o no   nose   note boat   hope   hose

Contrast /ɔ/ and /o/
1. oat   ought
2. boat   bought
3. pose   pause
4. law   low
5. coat   caught

Sentences:
1. He bought a new boat last week.
2. He showed me the original copy of Shaw's notebook.

The pair bought/boat

KK symbols: /ɛ/ & /æ/

5. said/sad   He said his dad was very sad.

/ɛ/   /æ/
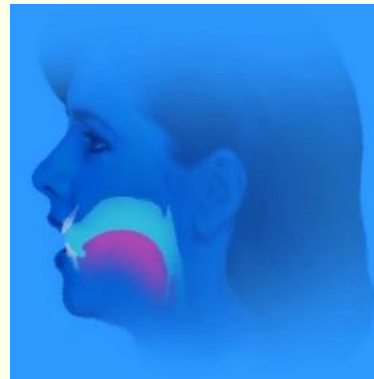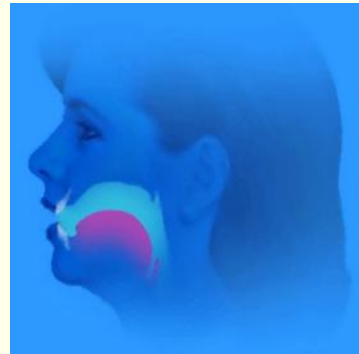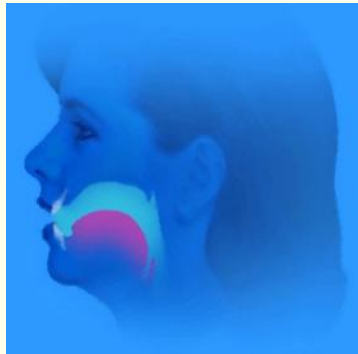
⊙10   The vowel /æ/

1. add   at
2. bad   bat
3. dad   dash
4. tab   tap
5. cab   cap

Sentences:
 1. I'm not mad, but I'm sad.
 2. I'm glad that Jack is back.

⊙11   Contrast /ɛ/ and /æ/

1. X   ax
2. bed   bad
3. dead   dad
4. left   laughed
5. guess   gas

Sentences:
 1. I guess the fire was caused by gas.
 2. The dragon had two heads.
 3. He said he was sad.

🎥 [ɛ] [ɛ] ɛ   bet   bed   less   leg   red   wreck

🎥 [æ] [æ] æ   bad   bat   bag   back   batch   badge

Contrast /ɛ/ and /æ/

1. X   ax
2. bed   bad
3. dead   dad
4. left   laughed
5. guess   gas

Sentences:

🔊 1. I guess the fire was caused by gas.

2. The dragon had two heads.

3. He said he was sad.

[ɑ] [ɒ] ɑ	got	god	nod	not	odd	op
[ʌ] ʌ	ugly	up	bud	love	luck	mud	much
[ʌ]	study	trouble	double	mother	brother	government
	country

Contrast the vowels /ʌ/ and /ɑ/
1. up   op (operation)
2. duck   dock
3. bucks   box
4. luck   lock
5. gut   got

Sentences:
1. The government seems to be bothered by some kind of trouble.
2. Shut the door, or you'll be shot.

[ɪr]	ear	year	beer	near	hear	volunteer
[ɛr]	air	bear	pair	fair	dare	share	chair
[aɪr]	ire	byre	fire	liar	dire	desire	retire
[ɝ]	bird	verb	perch	first	work	worm	word
[ɚ]	actor	doctor	letter	better			

A 1. At least you can give me a list.
    2. I know you live here, but you must leave tomorrow.

B 1. I met my roommate yesterday.
    2. Put the pepper on the paper.

C 1. I guess the fire was caused by gas.
    2. The dragon had two heads.
    3. He said he was sad.

D 1. The government seems to be bothered by some kind of trouble.
    2. Shut the door, or you'll be shot.

E 1. He bought a new boat last week.
    2. He showed me the original copy of Shaw's work.

F 1. You need to choose a good cookbook.
    2. The food looks good. Can you put it in my room?

1. We ran in the rain on Sunday noon.

2. He bought a boat and put it on the cold shore.

3. The caterpillar lived on the leaf.

4. The woman cooked food for the two poor tourists.

5. We love to lie down and look at the sky at night.

6. I want you to take it easy and don't make me hate you.

7. His mother was lucky enough and won another new cup.

8. My dad was sad when I packed my bag.

Rules for English vowel allophones

1. A given vowel is longest in an open syllable, next longest in a syllable closed by a voiced consonant, and shortest in a syllable closed by a voiceless consonant.
   (key)

2. Other things being equal, vowels are longer in stressed syllables.

3. Other things being equal, vowels are longest in monosyllabic words, next longest in words with two syllables, and shortest in words with more than two syllables.

   speed   speedy   speedily

4. A reduced vowel may be voiceless when it occurs after a voiceless stop (and before a voiceless stop).

   permission, tomato, compare, potato, catastrophe

   preparatory, introduction, replicate, complicate

5. Vowels are nasalized in syllables closed by a nasal consonant.

   ban, run, seen

6. Vowels are retracted before syllable final [ɫ].

   peel, pail, pal

Good evening, ladies and gentleman, and welcome. I'm sure we have all heard the expression, "Think Green." Tonight we are going to talk about ways that we can "Act Green" in our everyday lives.

The best place to start, of course, is in the home. Every day, people all over the world are hurting the environment without even knowing it. For example, busy families buy paper napkins and plastic food wrap at the supermarket. This helps them save time on housework, but after these things have been used, what happens to them? They go in the trash. In many places, especially in North America, big cities are running out of places to throw their trash. Shouldn't we do something about this before it's too late?

American English

British English

Australian English

South African English

New Zealand English

Irish English

Saint Kitts

NTPU

The vowel movements of different accents

1. British

[i], [ɪ]; [e], [ɛ]; [æ]; [ɑ]; [ɔ], [o]; [ʊ], [u]
[i], [ɪ]; [e], [ɛ]; [æ]; [ɑ]; [ɔ], [o]; [ʊ], [u]

2. Australian

[i], [ɪ]; [e], [ɛ]; [æ]; [ɑ]; [ɔ], [o]; [ʊ], [u]
[i], [ɪ]; [e], [ɛ]; [æ]; [ɑ]; [ɔ], [o]; [ʊ], [u]

3. South Africa

[i], [ɪ]; [e], [ɛ]; [æ]; [ɑ]; [ɔ], [o]; [ʊ], [u]
[i], [ɪ]; [e], [ɛ]; [æ]; [ɑ]; [ɔ], [o]; [ʊ], [u]

4. New Zealand

[i], [ɪ]; [e], [ɛ]; [æ]; [ɑ]; [ɔ], [o]; [ʊ], [u]

5. Irish

[i], [ɪ]; [e], [ɛ]; [æ]; [ɑ]; [ɔ], [o]; [ʊ], [u]

6. Saint Kitts

[i], [ɪ]; [e], [ɛ]; [æ]; [ɑ]; [ɔ], [o]; [ʊ], [u]

Of the vowel section

Thank you!

It would be interesting to speculate on what that 'saturation point', or final 'market penetration' of English might be. At this stage, very rough estimates based on the emerging patterns of middle class and urbanisation hint at around **3 billion** speakers by around **2040.** In other words, it is doubtful whether, even if the 'World English Project' were successfully implemented, that more than **around 40% of the global population** would ever become **functional users** of **English**.

When global English becomes mainstream, it provides no competitive advantage. Instead, there is a penalty for failure to adopt.

The number of new adopters declines as the market 'saturates'. This is the point at which cohorts who learned English in primary school move to secondary school and become young adults.

Much of the 'hype' about global English occurred when the trend was first spotted.

Global English

EFL

Competitive advantage is gained from adopting English only in the early stages.

The traditional EFL model will never completely die out but will account for a much smaller proportion of learners.

	EFL	Global English
Target variety	Native speaker, usually American or British	Focus on internationally intelligibility rather than a specific variety; carry-over of some L1 characteristics; expected to maintain national identity through English; need for receptive skills in a range of international varieties
Skills	Focus on speaking and listening; communicative curriculum	All skills including literacy; translation and interpretation skills often required; emphasis also on intercultural communication strategies
Teacher skills	Language proficient, trained in methodology	Bilingual with subject knowledge and understanding of local exams; or may have wider pastoral role for developing study skills and student support
Learner motives	Mixed; often poor motivation	Usually instrumental
Starting age	10–13 years old, secondary school	Builds on foundation provided by EYL
Primary purposes	To communicate with native speakers; to satisfy entrance requirements for jobs, universities	To get jobs in own country; to communicate with non-native speakers from other countries

73

	EFL	Global English
Learning environment	Classroom focused; time-tabled subject; occasional visits to native-speaking country	Classroom is a key context but is insufficient. Private sector and home tutoring often play a role
Content/ materials	Local government textbook; international publisher	Content often relates to another curriculum area in CLIL style approach
Assessment	Either: local exams or international (IELTS, Cambridge ESOL, TOEFL, TOEIC)	Existing exams often not appropriate; assessment often via assessment of ability to carry out tasks in English or by assessing knowledge taught through English
Failure pattern	Low proportion of learners reach high proficiency	'Mission critical' process where broader education or employment is dependent on actual skills (rather than token certification)

Comments and suggestions, please!

Thank you!