

## **English Phonetics-II**

### **8. English Fricatives**

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#### **Overview**

1. Introduction
2. RP English fricatives: their production
3. Generic properties
4. Classification. A comparison with Spanish fricatives

## 1. FRICATIVES: INTRODUCTION

- ❑ The largest class of Cs in English (nine). Also the largest category in the IPA chart.
- ❑ Five main points of articulation: labio-dental, dental, alveolar, post-alveolar and glottal
- ❑ The shape of the tongue is a determining factor in their production

## 2. FRICATIVES IN THE IPA CHART

### THE INTERNATIONAL PHONETIC ALPHABET (revised to 2005)

CONSONANTS (PULMONIC)

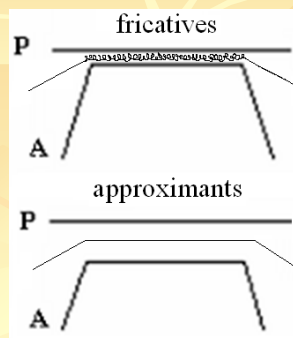
© 2005 IPA

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		ʈ ɖ	c ɟ	k ɡ	q ɢ		ʔ
Nasal	m	ɱ		n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ			ʀ					ʀ		
Tap or Flap		ⱱ		ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant				l		ɭ	ʎ	ʟ			

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

### 3. FRICATIVES: THEIR PRODUCTION (A)

- **Fricatives** are consonants produced by forcing air through a narrow channel made by placing two articulators close together.
- The turbulent airflow generated and escaping through the small passage is called **frication** (it can be a 'hissing' [s], a 'hushing' [ʃ] or a 'buzzing' sound).
- How much friction? It depends: strident fricatives (s, z, ʃ, ʒ) have a lot of friction noise, non-strident have less friction



### 4. ENGLISH FRICATIVES: THEIR PRODUCTION (B)

Non-sibilant

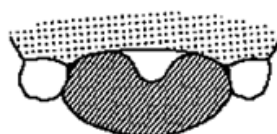
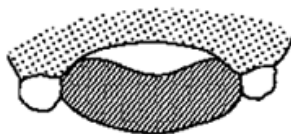
/f, v, θ, ð, h/



Sibilant and grooved

'hushing' /ʃ, ʒ/

'hissing' /s, z/



## 5. ENGLISH FRICATIVES: PHONETIC LABELS

- **Sibilant** fricatives:
  - /s/ voiceless alveolar fricative ( e.g. **say** /seɪ/, **lesson** / )
  - /z/ voiced alveolar fricative (e.g. **zoo** /zu:/)
  - /ʃ/ voiceless post-alveolar fricative (e.g. **shine** /ʃaɪn/)
  - /ʒ/ voiced post-alveolar fricative (e.g. **genre** /ʒɑnr/)
- **Non-sibilant** fricatives: /f/-/v/- /θ/-/ð/
- **Gooved**: /s, z, ʃ, ʒ/. The remaining are **slit** (i.e. non-sibilant sounds) .

## 6. GENERIC PROPERTIES: VOICING

- Four pair distinguished by voicing:
  - /f-v/, /θ-ð/, /s-z/, /ʃ-ʒ/
  - Less friction for voiced fricatives than for voiceless.
  - Friction in voiceless, twice as long than in voiced Cs.
  - Partial voicing: a solution ? tense vs. lax to circumvent that, occasionally, voiced fric may lack vocal fold vibration (e.g. loose). This is represented by a small circle underneath the symbol.

## 7. LABIODENTALS /f/-/v/

- **Articulation:** labio dental contact (lower lip). Because the tongue does not intervene, they are susceptible to secondary articulations (e.g. *from*)
- **Spelling:** why *'phantom'* but *'fancy'* and *phrenetic vs. frantic?* (Greek  $\phi \rightarrow \langle ph \rangle$ ) but not all: *cipher, sulphur...* (How about *haphazard*?)
- **Alternations:** [p/f]+[θ]: *diphthong, diphtheria, ophthalmic...* ([f/θ]). Preference for first choice.
- [f vs.  $\phi$ ]: *tag-of-war, o'clock, man-of-war.*
- *Lieutenant*, a special case (/lju:-- vs. lef- in USA)

## 8. LINGUO-DENTALS /θ/-/ð/

- **Articulation:** comparison with Spanish interdental (case of *Northenden*). In USA, many make them interdental. In baby speech –also some adults and in Cockney- they may use [f-v] for [θ-ð] (this is called **th-fronting**. E.g. *free = three* /fri:/, *brother = 'bruvver'* /'brʌvə/.
- In accents like Irish Eng., Indian Eng. etc. /θ, ð/ are replaced with the *dental* oral stops (i.e. plosives) /t, d/. This is called **th-stopping**. Thus, *tin ≠ thin, den ≠ then* (but in other accents like Caribbean & Liberian English they are homophonous)
- /ð/ Not a very common phoneme. It is found:
  - Word-initially only in English **function** words (e.g. *that, the, them, thus*, etc.) as well as in a **few adverbs** (e.g. *then, there*, etc.).
  - Word-medially, e.g. *mother, whether, worthy*
  - Word-finally in some verbs -typically spelled <-the>- (e.g. *breathe, bathe*)

### 8.1 LINGUO-DENTAL /ð/II (cont'd)

- **Allophonic realizations:**

- Plosive: (initially): *that's good* [ððats....]
- Nasal: *in the park* (= [ɪn-nə...])
- Lateral: *all those people* (= [ɔl-ləʊz...])
- Approximant: *weather*

### 8.2 LINGUO-DENTAL FRICATIVES III (CONT'D)

- **INITIAL**

- [θ] *theme, thirteen, theatre*
- [ð] *there, than, this, though...*
- [t] *Eltham, Esther, Theobalds, Thomson, Thailand, posthumous Anthony, Thomas, thyme, Theresa.*

- **MEDIAL**

- [θ] (Latin): *lethal, author, panther, ...*
- [ð] (German): *brother, father, worthy, northern.....EXC. Brothel ([θ])*

### 8.3 LINGUO-DENTAL FRICATIVES (cont'd)

#### \* FINAL

- \* [θ] if single coda: *path, cloth, lath...*, or vowel +liquid: *health*,
- \* **but [ðz]** (plurals): *paths, youths, clothes, truths, wreaths...*, also after long Vs or diphth. (NOT /ɜ:/ births[θ]) *booths, betroths, bequeaths...* **EXC. heaths, growths, faiths (/θ/ (asthma= 'th' does not sound))**
- \* **alternation**      [θ]                      [ð]
- \* bath.....bathe
- \* lath.....lathe (torno)
- \* mouth.....mouth
- \* breath.....breathe. **EXC. breathed** (breθt).
- \* **if Noun=Verb** → [θ] *froth, bath, berth...* alternation
- \* also in *smithy, loathsome, rhythm...*

### 9. POST-ALVEOLAR CONS. /ʃ/-/ʒ/

#### □ Articulation (=hushing sounds):

/ʃ/ and /ʒ/: typically involve labialisation (so they have a secondary 'point of articulation' or POA). They are also called 'palato-alveolars' (also /tʃ/ & /dʒ/). Post-alveolar consonants are labialised, like the affricates /tʃ/ & /dʒ/ and the approximant /r/ ([ɹ]).

#### □ Spelling and pronunciation

- **Word-initially: /dʒ/-/ʒ/-:** *gin, gaol, gist, jet.. But genre, prestige, massage...* (why? Early vs. later Fr. borrowings).

**/tʃ/-/ʃ/:** *chamber, Charles, cello, champion but champagne, Chicago, chauffeur, Charlotte...* (same reason)

**Notice initial <sch>:** *schedule, schism, school.*

## 9.1. POST-ALVEOLAR CONS. /ʃ/-/ʒ/

- **Medial:**
    - <**c,t,g,d** + i/u +Vowel= /ʃ/ (e.g. *initiative, special, social, vision*, (but *christian*).
    - If [s,z]+i/u +(V)= /ʒ/: *casual, hosier...*, and -URE: *erasure, measure, pleasure* (but *erase [z]*)
    - **Free variation:** /ʃ/-/ʒ/: *Asia(n)* (Mind! Not ASEAN!! /'æsi, æn/), *Persia, version*. /s-/ʃ/: *cas[z]uistic, tissue*. Occasionally, three: [s, z, ʒ]: *nausea, anaesthesia, etc.*
  - **Final:** *orange, range* ([**(d)ʒ**] (neutralization) .../sandwitch(es)).
- Endings -**tiate** [ʃ] vs -**ciate** [s]: *initiate-pronunciate; satiate* (pero *satiety*!)-*appreciate* and (also -[ʃ]). *Associate-association*: both (=free variation)

## 10. ALVEOLAR FRICATIVES /s/-/z/

- **INITIAL**
  - [s] *scene, seen, scent...* **EXC.** *sceptic [sk]*
  - [z] *zip, zebra, zeal...*
- **MEDIAL**
  - **DIS-** [s] *disorder, disunion, dislodge..*
  - **-OSITY, -SIVE, -SIBLE** [s]: *curiosity, ostensive, possible...*  
**Beware rule:** [z] between vowels : *music, deserve.* . **But** *research, disobey, etc..*
  - **[z]-SS-** : *dissolve, dessert, possess*, - **ZZ-** *scissors, gizzard, blizzard, dizzy,..*
  - **MUTE:** *viscount, isle, aisle, corps, apropos, debris.*
  - **TRANS-**
    - [s] \_\_\_\_ / + voiceless C (or [l]) : *trans-sexual, transform, transparency*, [**+stress**]: *tránsept, transit, transitory*,
    - [z] : *transition, transistor, transmit, transmission, transaction...*



## 10.1 ALVEOLAR FRICATIVES (cont'd)

### ■ FINAL

- **ONE SYLL = [z]:** *as, was, his..* **EXC.** *this, thus, us.*
- **-AS, -IS, -OS, -US [s]:** *gas, campus, thesis...* (but *traumas =/z/*).
- **-SE (HOMOGR.), if Vs = [z]:** *use, excuse, surprise...*  
**Ns = [s]:** *the use, the surprise...*
- **-CE/SE (HOMOPH.) Ns= [s]** license / practice  
**but:** advice [s]- advise [z];  
device [s]- devise [z]. **EXC.** promise [s]
- **PLURAL FORMS: [S] \_\_\_/** after voiceless: *stops, thinks, ... [Z] \_\_\_/* after voiced: *says, allows, fricatives, .[IZ]* after sibilant: *uses, focuses, judges,* etc.. **AND** after ' : James', Jones's, Charles's, Socrates', Denis's...

## 11. GLOTTAL FRICATIVE /h/

- **/h/** is the only consonant in English with a glottal point of articulation (POA).
- **/h/** has no voiced counterpart (all other English fricatives group in **homorganic** pairs differing in voicing (*/f-v/, /θ-ð/, /s-z/, /ʃ-ʒ/*))
  - **Although /h/ has no voiced counterpart as a phoneme, it is often realised as a voiced glottal fricative [ɦ] in-between voiced sounds (e.g. *ahead, behind*) realized with a breathy voiced.**
  - **Other suggestions (e.g. Odgen, 2009), " a period of voicelessness superimposed on a vowel". It might be transcribed as a small circle underneath a vowel.**
  - **/h/, followed by /j/ in words like *huge, human, Hugh,* etc. is phonetically a voiceless palatal fricative (as in German *ich*). So *hue* /hju:/ [çu:]**

## 11.1 GLOTTAL FRICATIVE /h/ (cont'd)

### ■ VARIETIES:

- [ç] *huge, humour...*
- [ɱ]: *where, which...*
- [h]: *a habit, a historian, exhale...*
- **MUTE**: Durham, Birmingham, Buckingham  
(why Callaghan with [h]?)

### CHARACTERISTICS

- **h-dropping, although considered substandard, is "a regular feature of Standard English"(Gimson)**
- **[h] distribution is related to stress. It patterns with [w] and [j] in that it is limited to syllable-initial position.**

## 11.2 GLOTTAL FRICATIVE /h/ (cont'd)

### FURTHER CHARACTERISTICS

- **/h/ is often a silent letter in many accents of English in content words like *hat, hear, hot*, etc. (this is referred to as **h-dropping**).**
- **<h> has been kept in many words of Greek origin after /r/ but without any phonetic value. E.g. *rheumatism, rhyme, rhetoric*, etc.**
- **all speakers of English 'drop /h/' in unstressed –weak- forms of the function words *he, her, him, his* as well as *have, has, and had* (when the latter are function words)**

## 12. GRAPHEME <X>

- INITIAL: *xylophone, xenophobia...*
- MEDIAL:
  - [ks] after a stressed syll.: *exit, anxious..*
  - [gz] before a stressed syll.: *exam, anxiety.*
- FINAL:
  - [ks]: *box*

**SPECIAL CASES:** *luxurious* and derivatives, but *luxury*= [kʃ].

## 13. Spanish vs. English fricatives/affric.

- ✓ Castilian Sp. has 4 voiceless fricatives and 1 affricate, but not voiced fricatives/affricates.
- ✓ Labiodental /f/ (*feria*), dental /θ/ (*cien*), alveolar /s/ (*so*), velar /x/ (*gen*), post-alveolar /tʃ/ (*cha*).
- ✓ In other accents of Sp. some of these fricatives are not found and/or others (voiceless or voiced) are used:
  - ✓ /dʒ/ instead of /tʃ/ in the Canary Islands or Cuba
  - ✓ /ʃ/ or /ʒ/ instead /x/ in Argentinian Spanish
  - ✓ /z/ instead of /s/ intervocalically in Cat. Sp.
  - ✓ /s/ instead of /θ/ in South Am, Andalucía, etc. (Seseo)
  - ✓ /θ/ instead of /s/ in parts of Andalucía (ceceo)
  - ✓ /h/ or cero instead of /x/ in Andalucía

## REFERENCES

### Compulsory reading:

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