

## Introduction to Phonetics I

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### 6. Consonants: Place of Articulation (II)

#### I. Outline for today:

1. Dictation and syllable counting quiz
2. Issues in students' notes
3. *A Course in Phonetics*: Chapter 1: Articulation and Acoustics
4. Q & A

#### II. Notes

##### 1. Dictation and syllable counting quiz

- a. Dictation: answers and corrections

##### What was said

- (1) lag [læɡ]
- (2) lack [læk]
- (3) pest [pest]
- (4) pack [pæk]
- (5) low [loʊ]
- (6) wreck/rec [ɹɛk]
- (7) past [pæst]
- (8) lug [lʌɡ]
- (9) paste [peɪst]
- (10) late [leɪt]

##### What was heard and why

flag [flæɡ]: more familiar word

\*reck (not a word): not familiar with the words *wreck/rec*



- b. Syllable counting quiz:

- Count the number of syllables in each word and put a number after the word to indicate how many syllables it has.
- Ex. **played: 1**

Words	Answers and IPA transcriptions
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(1) employed	3 2 [ɛm'plɔɪd]
(2) pitted	2 ['pɪtəd]
(3) pleased	1 [pli:zd]
(4) patted	2 ['pætəd]
(5) roared	1 [rɔ:rd]
(6) packed	1 [pækt]
(7) hissed	1 [hɪst]
(8) lagged	1 [lægd]
(9) nodded	2 ['nɒdəd]
(10) dabbed	1 ['dæbd]

**\*How to count the syllables in a word:**

- Count the number of the vowel **sounds** (not the number of vowel *letters*); and count the number of *beats* you sense in the word

**\*Pronunciation rules for past tense endings of regular verbs:** if the present tense of the verb ends with:

- i. /-d / or /-t/ + -ed → (SAE) [-əd]; (BE) [-ɪd] e.g. pat → patted ['pætəd]
- ii. a **voiced** sound (excluding /d/) + -ed → [-d] e.g. lag → lagged [lægd]
- iii. a **voiceless** sound (excluding /t/) + -ed → [-t] e.g. pack → packed [pækt]

## 2. Issues in student's notes

- a. Handwriting issue: [i] written [ɪ] → force of habit 習慣使然; very typical of Taiwanese writing; please **dot** your “I” – don’t write a line above them.
- b. What’s the difference between the wedge [ʌ] and the schwa [ə]?
  - Phonetically: [ʌ] is an open-mid back unrounded vowel; [ə] is a mid-central vowel (aka the neutral vowel or reduced vowel). They sound very similar in SAE, but [ʌ] sounds more like [a] in BE
  - Phonologically: [ʌ] can be stressed (e.g. under) or unstressed (e.g. umbrella) while [ə] can **never** be stressed (under the particular scheme we’re using for transcribing English)
- c. Some terms:
  - What is “computational linguistics” in Chinese?  
→ 計算語言學 (compute (v.) 計算)
  - How do we spell “唇顎裂” in English?  
→ Cleft palate
- d. The word *of* [əv]: as far as Ms. Chung knows, it is the **only** English word in which “f” is pronounced as [v]

## e. [ɛ] vs. [æ]:

- Among the most Taiwanese students, this pair is one of the most difficult.



	[ɛ]	vs.	[æ]	[eɪ]
	pet		pat	pate
<b>tongue</b>	higher		lower	higher than for [ɛ]
<b>jaw</b>	higher		lower	higher than for [ɛ]
<b>duration</b>	shorter		quite long	long (it's a diphthong)

- Start from the one you are good at: lower your tongue and jaw for [æ] but do not move the jaw down for [ɛ]; your mouth should just *barely* be open.
- If you're unsure which vowel it is, it's probably [ɛ], since Taiwanese are usually pretty good at hearing and producing [æ], so you will probably get that one right away without hesitation.

f. How do you write the IPA symbol for the “y” in *happy*?

- (AE) happy ['hæpi] **not** [ɪ]  
→ In AE, every word-final y is pronounced as [i] (as far as we know!)  
e.g. *happy, city, messy, silly*  
The same is true of the “-ies” plural ending in GA: it's pronounced [iz].
- In BE, sometimes word-final y is pronounced as [ɪ], and the plural ending –ies is usually [ɪz]
- The difference between [i] and [ɪ] is not just one of duration but also one of **quality**.

	[i]	vs.	[ɪ]
<b>tongue</b>	higher		a bit lower and more back
<b>duration</b>	longer		shorter
<b>category</b>	tense/long vowel		lax/short vowel



For more information, please read CET article #3:

3. 大師開講 — 提升聽力祕訣： /i/ 和 /ɪ/ 的辨別 in No. 71, May/June 2012, p. 12-14.

[http://homepage.ntu.edu.tw/~karchung/pubs/71\\_hello\\_et.pdf](http://homepage.ntu.edu.tw/~karchung/pubs/71_hello_et.pdf)

### 3. A Course in Phonetics: Chapter 1: Articulation and Acoustics (p. 10-13)

- Classifying consonants according to their place of articulation
  - Two parameters for distinguishing consonants:
    - (1) Place of articulation 發音位置 (which organs touch other organs)
    - (2) Manner of articulation 發音方式 (the **way** in which the articulation is produced and how close the articulators get to each other)
  - Articulators that can obstruct the airstream:
    - i. lips → **labial** – [b] [p] [m] [f] [v] ㄅ ㄆ ㄇ ㄈ ㄇ ㄎ (earlier symbol for [v] in 注音符號)
    - ii. tip/blade of the tongue → **coronal** – [d] [t] [n] [l] [s] [z] ㄉ ㄊ ㄋ ㄌ ㄝ ㄗ (no symbol for [z])
    - iii. back of the tongue → **dorsal** – [g] [k] [ŋ] ㄍ ㄎ ㄍ ㄍ (earlier symbol for [ŋ] in 注音符號)  
also includes Mandarin ㄍ [x]

- The three terms – labial, coronal, and dorsal – are used more often in **phonology** than in phonetics to classify sounds. The terms lump too many categories together (e.g. tongue tip, blade and front are all “coronal”) to be very useful in phonetics.  
→ We need more specific (less general) terms.

b. Terms for sounds formed with obstructions that involve different parts of the oral tract:

- (1) Bilabial 雙唇音: made with the two lips coming together  
e.g. buy, pie, my
- (2) Labiodental 唇齒音: lower lip and upper front teeth  
- As far as researchers know, no language has a labiodental sound articulated with the **lower front teeth and upper lip**.  
e.g. fie 「可惡!」, vie 競爭
- (3) Dental 齒音: **tip or blade** of the tongue and upper front teeth  
- For most speakers of Mandarin, ㄉ and ㄊ are dental.  
- Most American English speakers protrude their tongues when saying words that have “th” sounds, voiced or voiceless.  
- Some British speakers also protrude their tongues, but some do not. At least one phonetically-trained Brit questions Ladefoged’s statement that most speakers of British English put their tongues close behind the upper front teeth when saying words that have “th” sounds.  
- We use **interdental** 齒間音 to describe sounds in which the tongue **tip protrudes from between** the teeth.  
e.g. thigh [θaɪ] 大腿, thy [ðaɪ] 【古】你的 – (familiar) ‘you’
- (4) Alveolar 齒齶音/舌尖音: tongue tip or blade and the alveolar ridge  
e.g. tie, die, nigh 【文】接近的, sigh, zeal (n.) 熱心, lie
- (5) Retroflex 捲舌音/翹舌音: **underside** of the **tip of the tongue** and the back of the alveolar ridge  
Many speakers of English do not use retroflex sounds at all, but some people do, or sometimes do.  
e.g. ire, hour, air

**\*Postvocalic /r/ in English:**

- Postvocalic /r/ is pronounced in Irish English, General American, and some varieties of British English.

→ these are called “rhotic” [ˈrɔʊtɪk] dialects. Standard BE is a **non-rhotic** variety of English

**\*Distribution of non-rhotic dialects in the US:**

- Non-rhotic accents can be found in many parts of the Eastern US, e.g. New England and New York City, and in the US South; some are *inconsistently* non-rhotic.
- Reasons for non-rhoticity:
  - i. the Eastern US: close relationship with England; perhaps other reasons. But non-rhotic BE is a variety with high prestige, while non-rhotic varieties of US English tend to have *lower* prestige than General American.
  - ii. the US South: it is said that formerly, many parents sent their children to England; they subsequently brought their pronunciation habits back with them, and they spread.

(6) Palato-alveolar 顎齶音: **blade** of the tongue and the back of the alveolar ridge

e.g. shipshape, genre, child, join

cf. alveolo-palatal 齶顎音

e.g. ㄐ ㄑ ㄒ in Mandarin and some sounds in Polish.

(7) Palatal 顎音: **front** of the tongue and hard palate

e.g. you ([j] is the only palatal sound in English)

(8) Velar 軟顎音/舌後音/舌根音: **back** of the tongue and the soft palate (i.e. velum)

e.g. hack, hag, hang

#### 4. Q & A

a. What is the difference between [ɑ] and [a]?

- The segment [ɑ] exists in English as **a monothong** (單母音/單元音); the tongue has a low back position as in the word *father*.
- The segment [a] exists in English as **the first segment in two diphthongs** 雙母音/複元音, as in the word *high* [aɪ] and the word *how* [aʊ], but **not** as an independent monophthong. For [a], the highest point of the tongue is in the center of the oral cavity, a little bit higher than it is for [ɑ]. It may be influenced by [ɪ], originally a mid-high front vowel, and [ʊ], a mid-high back vowel – and [a] is a low front vowel.

**\*Diphthongs in English**

- my [aɪ], may [eɪ], mouse [aʊ], most [oʊ], moist [ɔɪ], muse [ju]

cf. Mandarin ㄞ [aɪ] ㄟ [eɪ] ㄞ [aʊ] ㄞ [oʊ]

b. What is the difference in pronunciation between *raised* and *raced*?

- raised [ʒeɪzɪd]: the “s” is voiced, so the diphthong [eɪ] is longer, and the final “d” is voiced.
- raced [ʒeɪst]: the “c” is a voiceless [s] sound, so the diphthong [eɪ] is shorter, and the final “d” is a voiceless [t].

**\*Why is the vowel in the two words of different lengths?**

- The vowel is affected by the following sound: if it is voiced, the preceding vowel will be longer; if the consonant is voiceless, the preceding vowel will be shorter. This may be universal or nearly universal in the world's languages.

c. Why is the transcription [tōn] for the word *tone* circled as “wrong” in my class notes even though that's the pronunciation given in the dictionary?

- Most US-published dictionaries use ad hoc 將就、隨便湊 pronunciation symbols, and the symbols adopted generally differ from edition to edition.

e.g. In elementary schools in the US, students learn to distinguish “long vowels” and “short vowels” using the diacritical marks, e.g. the “short ‘o’” in *not* is marked with a breve, meaning ‘short’: no◌t; and the “long ‘o’” in *note* is marked with a macron, indicating a long vowel: no◌te.

- Avoid using US-published dictionaries if you want to check the written transcription of the pronunciation of a word (MW is good for definitions, etymologies and sound files though). You can use the *Cambridge Learner's Dictionary Online* to check both US and BE pronunciations of English words in IPA at <http://dictionary.cambridge.org/>

**✚ Pronunciation corrections:**

**boxed** syllables are stressed; \* = tonic stress



consonant	[ˈkɒnsənənt](BE)	→ [ˈkɑnsənənt] (AE; stick to one variety)
articulators	[ɑːˈtɪkəleɪrə]	→ [ɑːˈtɪkjuleɪrə] (vowel: note the [j] glide)
cause	[kaʊz]	→ [kɔz] (vowel)
lips	[lɪps]	→ [lɪps] (vowel)
tongue tip	<b>tongue</b> * <b>tip</b>	→ * <b>tongue</b> tip (compound noun)
blade	[bleɪd]	→ [bleɪd] (vowel) cf. bled [bled]
labial articulations	<b>labial</b> articu* <b>lations</b>	→ * <b>labial</b> articulations ( <i>articulations</i> was repeated)
using (v.)	[ˈjuːzɪŋ]	→ [ˈjuːzɪŋ] (consonant) vs. use [s] (n.) similar: house (v.) [z] vs. (n.) [s] teethe (v.) [ð] vs. teeth (n.) [θ]
coronal	co' <b>ronal</b>	→ ' <b>co</b> ronal (word stress)
not need	[ˈnɑ_ˈnɪd] (no stop)	→ [ˈnɑ?ˈnɪd] (the word final [t] becomes a glottal stop [ʔ] when followed by a consonant-initiated word)
described	[dɪsˈkʌɪ <b>ɪ</b> bd]	→ [dɪsˈkʌɪ <b>ɪ</b> bd] (longer vowel before a voiced consonant)
feeling	[ˈfɪlɪŋ]	→ [ˈfɪlɪŋ] (vowel) cf. filling [ˈfɪlɪŋ] 補牙的銀粉
these terms	* <b>these</b> <b>terms</b> ,	→ <b>these</b> * <b>terms</b> , (tonic stress on the last stressed syllable of an utterance)
these terms, however,	no rise	→ rise to signal continuation (continuation rise)

articulatory_gestures	extra pause in between	→ don't pause; these two words are a unit, and the final sound of <i>articulatory</i> is a vowel, not a stop)
sufficient detail	[sʌ'fɪʃɪən_'dɪteɪl] (no stop)	→ [sʌ'fɪʃɪənt 'dɪteɪl] ([t]; homorganic with /d/, so /t/ is more likely than a glottal stop here)
arrow	['æɹou]	→ ['ɛɹou] (in Midwestern US English)
figure	['fɪgə]	→ ['fɪgʝə] (the [j] glide was missing)
in	[ɪn]	→ [ɪn] (vowel)
Jamie	['dʒɛmi]	→ ['dʒɛɪmi] (vowel)
bilabial	[baɪ'læbiəl]	→ [baɪ'leɪbiəl] (vowel) similar: labial
these; these	[ðɪz]; [ðɪs]	→ [ðɪ:z] (vowel and consonant)
words	[wɜ:z]	→ [wɜ:dz] (consonant; [dz] should sound like 字)
comparable	['kæmpərəbəl]	→ ['kæmpərəbəl] (more common in Midwestern US English)
American	[ə'mɛɪkə_]	→ [ə'mɛɪkən] (the [ŋ] was missing leaving only a bare nasalized [ə])
tongue	[tuŋ]	→ [tʌŋ] (vowel)
called	[kɔld]	→ [kɔld] (vowel)
interdental	['ɪntɪdɪntəl]	→ inter'dɛntəl (word stress)

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1	<p><b>What was said</b></p> <p>(1) bag [bæg] (2) back [bæk] (3) paid [peɪd] (4) pack [pæk] (5) sea [si:] (6) sea [si:] (7) paid [peɪd] (8) sea [si:] (9) paid [peɪd] (10) sea [si:] (11) sea [si:]</p> <p><b>What was heard and why</b></p> <p>bag [bæg] more familiar word</p> <p>*back that a word that familiar with the words heard, too</p>		National Taiwan University/Karen Steffen Chung 史嘉琳 <a href="#">This work is licensed by Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Taiwan</a>																
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6-7	<p><b>4. Pronunciation corrections:</b></p> <p>consonant [k] vs. [g] articulators [tʃ] vs. [dʒ] color [k] vs. [g] top [tʃ] vs. [dʒ] trapeze [tʃ] vs. [dʒ] blade [tʃ] vs. [dʒ] labial articulators [tʃ] vs. [dʒ] voicing [tʃ] vs. [dʒ]</p> <p>coronal [tʃ] vs. [dʒ] retroflex [tʃ] vs. [dʒ]</p> <p>described [tʃ] vs. [dʒ] hook [tʃ] vs. [dʒ] these terms [tʃ] vs. [dʒ] these terms, however, no else</p> <p>articulatory gestures extra pause in between sufficient detail [tʃ] vs. [dʒ] anwar [tʃ] vs. [dʒ] Eggs [tʃ] vs. [dʒ] is [tʃ] vs. [dʒ] June [tʃ] vs. [dʒ] blabber [tʃ] vs. [dʒ] blow, these [tʃ] vs. [dʒ] words [tʃ] vs. [dʒ] compatible [tʃ] vs. [dʒ] American [tʃ] vs. [dʒ] trapeze [tʃ] vs. [dʒ] called [tʃ] vs. [dʒ] intentional [tʃ] vs. [dʒ]</p>		National Taiwan University/Karen Steffen Chung 史嘉琳 <a href="#">This work is licensed by Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Taiwan</a>																