Introduction to Phonetics I

Fall 2012
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5. Places of Articulation I

I. Outline for today:

1. Phonetic Symbols: KK vs. IPA
2. *A Course in Phonetics*: Chapter 1: Articulation and Acoustics
3. Homework

II. Notes

1. **Phonetic Symbols: KK vs. IPA**
   a. The Kenyon and Knott (KK) phonetic symbols **KK 音標**
      - Most Americans have never heard of the "KK phonetic symbols"
      - KK is a subset of the larger set of IPA symbols, with some specially adapted features for American English
      - Whether learning KK is an advantage is still under debate; as a phonetics teacher, I think it is useful and important; sometimes the teachers who teach it do not teach the correct pronunciations, but knowing the symbols is a huge advantage in any case
      - KK is no longer taught in many Taiwan classrooms

   b. The Daniel Jones (DJ) phonetic symbols
      - The phonetic symbol system that was taught in Taiwan before the mid 1960s, when Standard Southern British (SSB – a variety of English spoken in Southern England; though it now has fewer and fewer native speakers) was the standard for English teaching in Taiwan
      - Differences between KK and DJ:
        DJ posits pairings of "long" and "short" vowels, and uses the length mark ː , a diacritic, or diacritical mark 區別發音符號, to mark the "long" vowels, for example:

	KK	DJ
f**oo**t	[ʊ]	[u]
f**oo**d	[u]	[uː]

The two dots are actually triangles, with the top one inverted. A regular colon ː is often used in handwriting and also on computers for typographical convenience.

Here is a chart with the DJ pronunciation symbols:
http://www.inf.fu-berlin.de/lehre/WS05/19617-K/PhonSymb.jpg

c. The International Phonetic Alphabet (IPA) **國際音標** (also called 萬國音標; this Chinese term has mainly been used to refer to the DJ pronunciation symbol system)
- *IPA* can also refer to the International Phonetic Association
- The IPA has been revised a number of times over history, most recently in May 2005 with the addition of a letter for a labiodental flap. See:
http://en.wikipedia.org/wiki/International_Phonetic_Alphabet#History
- There is also an "Americanist" system still in use, especially in works on phonology and in TESOL texts. It uses, for example, the háček symbol: /š/ for /ʃ/ and/č/ for /tʃ/; also /ay/ for /aɪ/. See this link for details:
http://en.wikipedia.org/wiki/Americanist_phonetic_notation
- Key differences between general IPA and KK:

	KK	IPA
n**o**	/o/	[oʊ]
d**ay**	/e/	[eɪ]
rain	/r/	[ɹ]
wa**t**er	/t/	[ɾ]

Kenyon and Knott considered the sounds [oʊ] and [eɪ] less diphthongal than the other diphthongs, so they used only single vowel symbols

* These choices may account for some of the pronunciation mistakes in Taiwan:
- IPA [eɪ] → KK [e] ➔ the vowel in *name* is often mispronounced as [ɛ] or [æ]
- IPA [oʊ] → KK [o] ➔ the vowel in *no* is often mispronounced as [ɔ].

The last symbol is the "tap" symbol, used for a /t/ between two vowels.

* Diphthong 雙母音:
- Definition: **two vowels** pronounced quickly, one after the other, **within a single syllable**
- Very often the component vowels used in diphthongs do not exist alone in a given language as monophthongs (a single vowel sound)

e.g. the [a] in [aɪ] and [aʊ] does not exist as a monophthong (單母音) in English; and [ɑ] is always a monophthong

* "r" sound:
- The most common "r" sound in the world's languages is either a tap [ɾ] (e.g. [AmE] *wa**t**er*; Spanish *pe**r**o* 'but') or a trill [r] (Spanish *pe**rr**o* 'dog')

- The English "r", written [ɹ] in IPA, is a relatively rare sound in the world's languages; however, it is found in Beijing Mandarin, and in the dialect of Dutch spoken in Leiden
- KK, and most other pronunciation symbol systems, use a regular [r] for the English "r" for typographical convenience

2. ***A Course in Phonetics*: Chapter 1: Articulation and Acoustics** (p. 8-10)
   a. Reviewing the waveform on p. 7
      - A waveform can tell us: 1. whether a sound is **voiced** or **voiceless**; 2. its **loudness**; 3. its **manner** of articulation. What it can't tell us: **place** of articulation
      - The sound [f]: low amplitude → not loud; [θ] is even softer
      - If the amplitude of the two vowels differs it means one is louder than the other, and this is often due to stress vs. lack of stress
      - The vertical lines of the two vowels are evenly spaced → because **all vowels are voiced**
      - The vertical lines of [f] are irregular because [f] is voiceless noise
      - Pulse: One vibration = one pulse; the result of the air under pressure pushing the vocal cords apart and together one time

        * Definition of noise:

        - Noise: a series of disorganized, random frequencies occurring at the same time; there is no one single identifiable frequency

          Cf. Voicing → an identifiable single, regular frequency over a period of time

   b. Places of articulatory gestures (starting from p. 8)
      - Articulators in the oral tract can be divided into two types:

        i. Passive articulators: the articulators that form the upper part of the oral tract; they hardly move in the articulation process

        ii. Active articulators, e.g. the tongue and the jaw, which belong to the lower part of the oral tract; they can produce different gestures and move toward the upper, passive articulators when speaking
      - Breaking down the word *capital* ['kæpərəl] as an example

        [k] – passive articulator: velum; active articulator: the back of the tongue

        [æ] – nothing is touching anything

        [p] – the lower (active) lip moves up to the upper (passive) lip

        [ə] – nothing is touching anything

        [r] – passive articulator: the alveolar ridge; active articulator: the tip of the tongue

        [ə] – nothing is touching anything

        [l] – (for most people) passive articulator: alveolar ridge; active articulator: the tip of the tongue

* Two kinds of /l/:

- There are two kinds of /l/ sound in English, the clear /l/ [l], which occurs **before vowels**, and the dark /l/ [ɬ], which occurs **after** a vowel (i.e. it's "**postvocalic**").
- Clear and dark /l/ are not as clearly distinguished in American English as in British English

- Ways to describe language sounds :
  i. Articulatory description: this is the method most often used for consonants; you describe which organs touch which, and how;
  ii. Acoustic description: this is more often used for vowels and /r/; you describe what you **hear**, since it is difficult to describe the actual places of articulation
- To review the terms for places of articulation, go back to
  i. course webpage p. 5 at
  http://homepage.ntu.edu.tw/~karchung/intro%20page%205.htm
  ii. Also refer to the class handout for September 17, 2012

* Terms:

- frontal incisors: 門牙 – related to *scissors*; used to cut food
- protuberance [proʊ'tubəɹrəns]: 突出物 – refers to the alveolar ridge in this context
- velic closure: 軟顎封閉 – describes the state of the velum being raised, thus closing off the nasal tract and allowing the air to go out only through the mouth → to produce oral sounds

- The most mobile articulators belong to the lower surface of the vocal tract, the tip and blade of the tongue in particular
- Breaking down the word *peculiar* [pɛ'kjuliəɹ] to practice describing consonant articulations:
  p – two lips come together; then the back and center of the tongue are raised
  k – (for most people) the back of the tongue touches **somewhere between** the hard palate and the velum → **co-articulation** due to the following [j]
  l – (for most people) the tip of the tongue touches the alveolar ridge
- [t] in *true* and *tea*: the tongue moves further to the front of the mouth for *tea* than it does for *true* → **coarticulation** due to the following [i]
- [s] vs. [ʃ]: major differences

	[s]	[ʃ]
acoustic quality	higher in pitch	louder
articulation	a groove (hollow, channel) down the center of the tongue	V-shaped tongue

- To produce consonants, the airstream must be obstructed in some way as it passes through the vocal tract
  → Consonants can be classified according to the place and manner of this obstruction
  place of articulation 發音點 manner of articulation 發音方法
- Less specific categories of places of articulation, used more often in phonology than in phonetics:
  i. labial 唇音
  ii. coronal 舌頂音 or 舌冠音 or 舌前音
  iii. dorsal 舌背音

Pronunciation corrections:

framed syllables are stressed; * = tonic stress

…vibration (which)	rushed through, flat intonation	→	pause and rise before punctuation (rhythm and continuation rise)
smaller	['smolɚ]	→	['smɔlɚ] (vowel; very little rounding before /l/)
variation	[væɹi'eɪʃən]	→	[vɛɹi'eɪʃən] (in Midwestern US English)
	air *pressure	→	*air pressure (compound noun)
called	[kʊuld]	→	[kɔld] (vowel) (Many Taiwanese have a strange pronunciation of [ɔ], probably British-influenced
will find out	will found out	→	will find out (*will* can't be followed by a past participle; this error may be a kind of hypercorrection 矯枉過正)
names	[nɛms]	→	[neɪmz] (vowel; voicing of /s/ after voiced consonants)
principal parts	*principal parts	→	principal *parts (phrasal stress)
figure	['fɪgɚ]	→	['fɪgjɚ] (the [j] was missing)
the	[də]	→	[ðə] (stick out the tongue)
five	[faɪf]	→	[faɪːv] (voicing; lengthen the vowel)
		→	Cf. fife [fʌɪf] 短笛
further	['fɝdɚ]	→	['fɝðɚ] (stick out the tongue)
velum	['vɪləm]	→	['viləm] (vowel)
pharynx	['fæɹiŋks]	→	['fɛɹiŋks] (in Mid-Western AE)
uvula	['juvulə]		['juvjulə] (the second [j] was missing)
		→	cf. uvular ['juvjulɚ] (adj.)
front	[frant]	→	[frʌnt] (vowel)
center	['sɛntʰɚ]	→	['sɛnɾɚ] (tap, or at least no aspiration)
partly	['paɹtʰli]	→	['paɹʔli] (glottal stop)

position	[poʊ'siʃən]	→	[pə'ziʃən] (schwa; voiced [z], not [s]
on	[ɑŋ]	→	[ɑn] (alveolar nasal, not velar)
tip	[tip]	→	[tɪp] (vowel)
ridge	[ɹidʒ]	→	[ɹɪdʒ] (vowel)
other consonant sounds, …	flat	→	rise to signal continuation (continuation rise)
important	[ɪm'pɔɹrənt]	→	[ɪm'pɔɹt?nt] or [ɪm'pɔɹ??nt] (glottal stop)
deep	[dɪp]	→	[dip] (vowel)
cannot represent	no stop	→	glottal stop
that shows	no stop	→	glottal stop
midline	['mɪdlãĩ]	→	[mɪdlaɪn] (the final "n" was missing)
But we	no stop	→	glottal stop
in	[in]	→	[ɪn] (vowel)
in order	no linking	→	linking (the word-final consonant becomes the word-initial consonant of the following word if it begins with a vowel; also, alveolar, not velar)
conceptualization	[kʌnsɛptʃuəlaɪ'zeɪʃən]	→	[kʌnsɛptʃuələ'zeɪʃən] (pronunciation variety: *-ization* in AE usually [ə]; in BE it's usually [aɪ])

* "*Five*" issues

- Are the vowel qualities different in *five* and *fife*?

→ *Five* and *fife* share the same phoneme /aɪ/, but the [aɪ] in *five* is longer and the tongue and jaw are lower.

- Three things about *five* to pay attention to:

i. voicing of [v]

ii. vowels before a voiced sound should be longer.

iii. [aɪ] + voiced sound → tongue and jaw lower.

+ **voiceless** sound → tongue and jaw higher; [ʌɪ] ➔ **Canadian raising**, also found in many varieties of US and Scottish English

* About Canadian raising:

- Another diphthong [aʊ] → [ʌʊ]

e.g. *about the house* [ə'bʌʊt ðə hʌʊs] (ICRT broadcaster Terry Engel and DFLL instructor Ted Partington both have Canadian raising)

- Not all Canadians have Canadian raising; it is found mainly in the eastern part of Canada.

→ See course Webpage (Phonetics II) 2. The American Tap & Canadian Raising at:
http://homepage.ntu.edu.tw/~karchung/Phonetics%20II%20page%20two.htm

* Glottal stop 喉塞音:

- In American English, the "t" has many variations, one of which is the glottal stop [ʔ]. One of the environments for it to occur is when the word-final "t" is followed by a word beginning with a consonant.
- To produce a glottal stop, imagine a basketball hitting your tummy hard. What sound do you make? It should be a glottal stop or two, probably with a vowel between: [ʔəʔ]! Your tummy will be tensed up when doing this. Your tongue tip doesn't make the gesture for pronouncing [t], i.e. your tongue tip does not touch the alveolar ridge, or anywhere else, when producing a glottal stop.

E.g. hit me [hɪʔ mi]

- There's also a glottal stop in Southern Min,:

E.g. S Min 藥 [jɔʔ] 'medicine'; this originally had a final /-k/ which later became a glottal stop
S Min 呷 [tɕjaʔ] ('eat')
S Min 鴨 [aʔ]; this originally had a final /-p/

But these days, whether the final glottal stop is present in these words or not does not seem to affect Taiwanese Southern Min speakers' perception of the meaning.

Note: The glottal stop final in SM is dropped before a diminutive 仔 or utterance-final 啊 [a] , e.g.:
i. When saying 藥仔 [jɔ a] ('medicine' + diminutive suffix), the glottal stop disappears.
ii. Some people say "我無愛呷**啊**"; 'I don't want to eat it' – the [a] sound in 'eat' is lengthened, with no glottal stop: [gua bo ai tɕiaː], in order to sound less direct.
→ Start paying attention to the final stops and nasal finals in Southern Min. Do you pronounce a final [-m] or final [-n] in the family name 林 *Lin*? Taiwan Southern Min is changing!

* About mistakes we make in English pronunciation:

- Most of the errors we make are systematic. To learn English or any language well, the first thing we need is **awareness** of what we are doing, and then an understanding of what the correct targets are.

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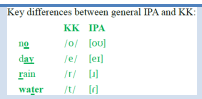
2			National Taiwan University / Karen Steffen Chung 史嘉琳 This work is licensed by Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Taiwan
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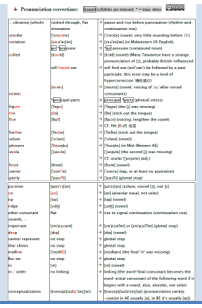
5-6			National Taiwan University / Karen Steffen Chung 史嘉琳 This work is licensed by Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Taiwan