

# Korean consonants, IPA

	Bilabial		Alveolar		Retro-flex		Alveolo-palatal		Velar		Glottal	
Plosive	p	[b]	t	[d]					k	[g]		
Lightly asp. plosive	p <sup>h</sup>		t <sup>h</sup>						k <sup>h</sup>			
Heavily asp. plosive	p <sup>hh</sup>		t <sup>hh</sup>						k <sup>hh</sup>			
Affricate			[t͡s]	[d͡z]			[t͡ɕ]	[d͡ʑ]				
Lightly asp. affricate			[t͡s <sup>h</sup> ]				[t͡ɕ <sup>h</sup> ]					
Heavily asp. affricate			[t͡s <sup>hh</sup> ]				[t͡ɕ <sup>hh</sup> ]					
Fricative	[ɸ]	[β]	s				[ɕ, ɕ̚]	[j]	[x]	[χ]	h	[ɦ]
Lightly asp. fricative			s <sup>h</sup>									
Nasal		m		n				[ɲ]		ŋ		
Tap				[ɾ]		[ɽ]						
Approximant		w						j		ɰ		
Lateral approximant				l		[ɭ]		[ɭ]				

- Where symbols appear in pairs, the one on the right represents a voiced consonant.
- Where symbols appear singly, they are placed on the left within their column if they represent a voiceless consonant, and on the right if they represent voiced.
- Symbols enclosed in brackets represent non-phonemic consonants.
- Blacked-out cells indicate phones judged to be impossible.
- The [w] in the bilabial column with the light blue coloring of the velar column represents a **velarized** bilabial approximant.
- The non-phonemic bilabial, palatal, velar, and glottal fricatives are all allophones of /h/.
- All taps and lateral approximants are allophones of /l/.
- The alveolo-palatal row contains two palatal phones: [ɕ] and [j].
- The non-phonemic alveolo-palatal fricatives are allophones of the corresponding alveolar fricatives occurring before front vowels.

- The unaspirated stops, with VOT of less than 20 ms, are called “tense” sounds.
- The lightly aspirated stops, with a VOT of 20-80 ms, are called “lax” sounds.
- The non-phonemic voiced stops are allophones of the lax stops and affricates.
- The heavily aspirated stops have a VOT of 80 ms or more.
- A similar situation holds with the unaspirated, lightly aspirated, and heavily aspirated affricates, but with about 20 ms more VOT across the board.
- The fricative [s] corresponds only to one phoneme, a “tense” one with a duration of ~200 ms.
- The lightly aspirated fricative [s<sup>h</sup>] corresponds only to one phoneme, a “lax” one with a shorter duration of ~150 ms, of which some may consist of perceptibly distinct frication and aspiration phases.
- The non-phonemic alveolar affricates are allophones of the corresponding alveolo-palatal affricates occurring before back vowels.



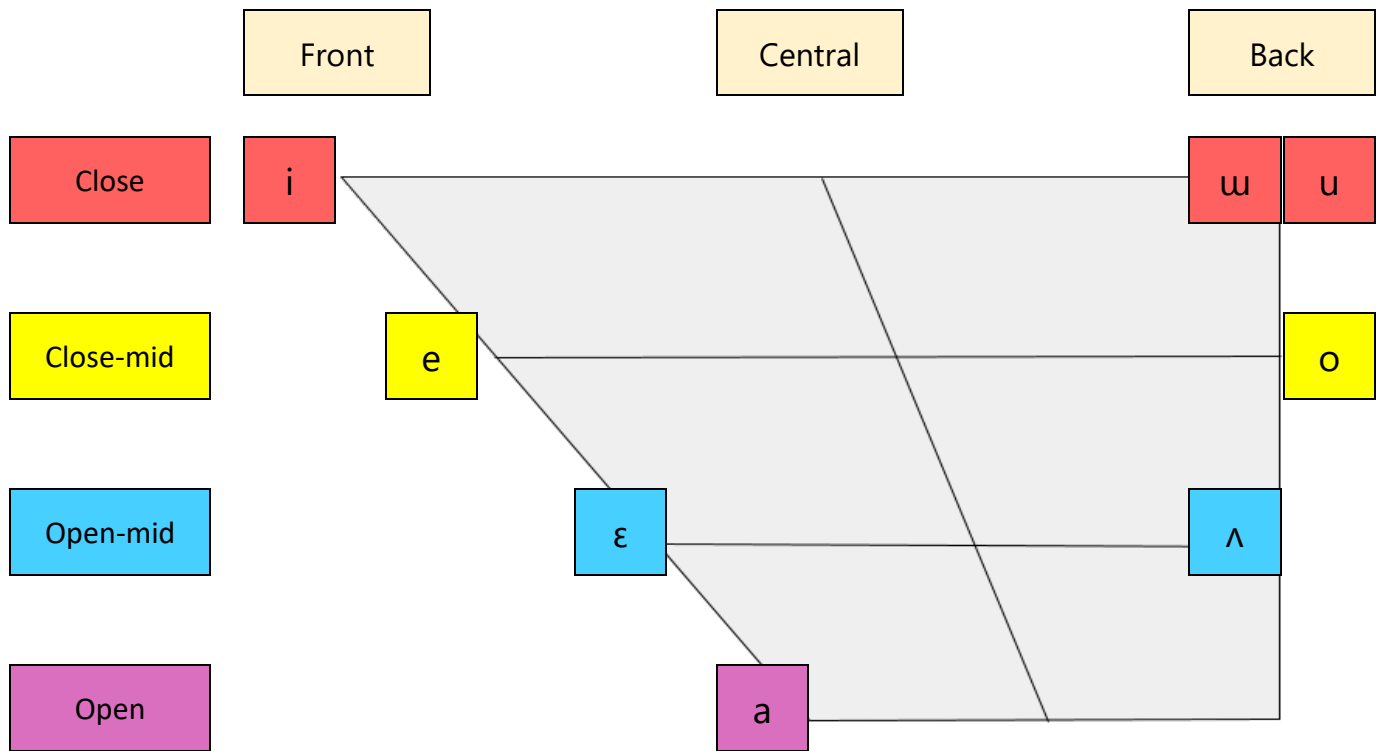
# Korean consonants, Hangul

	Bilabial		Alveolar		Retro-flex		Alveolo-palatal		Velar		Glottal	
Plosive	ㅂ	(ㅃ)	ㄲ	(ㄳ)					ㄱ	(ㄷ)		
Lightly asp. plosive	ㅍ		ㅋ						ㆁ			
Heavily asp. plosive	ㅍ		ㅍ						ㆁ			
Affricate			(ㄲ) (ㄳ)				ㄲ (ㄳ)					
Lightly asp. affricate			(ㄲ)				ㄲ					
Heavily asp. affricate			(ㄲ)				ㄲ					
Fricative	(ㄲ) (ㄳ)	ㄲ	ㄲ				(ㄲ, ㄳ) (ㄳ)	(ㄲ) (ㄳ)	(ㄲ) (ㄳ)	(ㄲ) (ㄳ)	ㄲ (ㄳ)	
Lightly asp. fricative			ㄲ									
Nasal		ㄲ		ㄲ				(ㄲ)		ㅇ		
Tap				(ㄲ)		(ㄲ)						
Approximant		ㅇ						ㅇ		ㅇ		
Lateral approximant				ㄲ		(ㄲ)		(ㄲ)				

- Symbols enclosed in parentheses represent non-phonemic consonants.



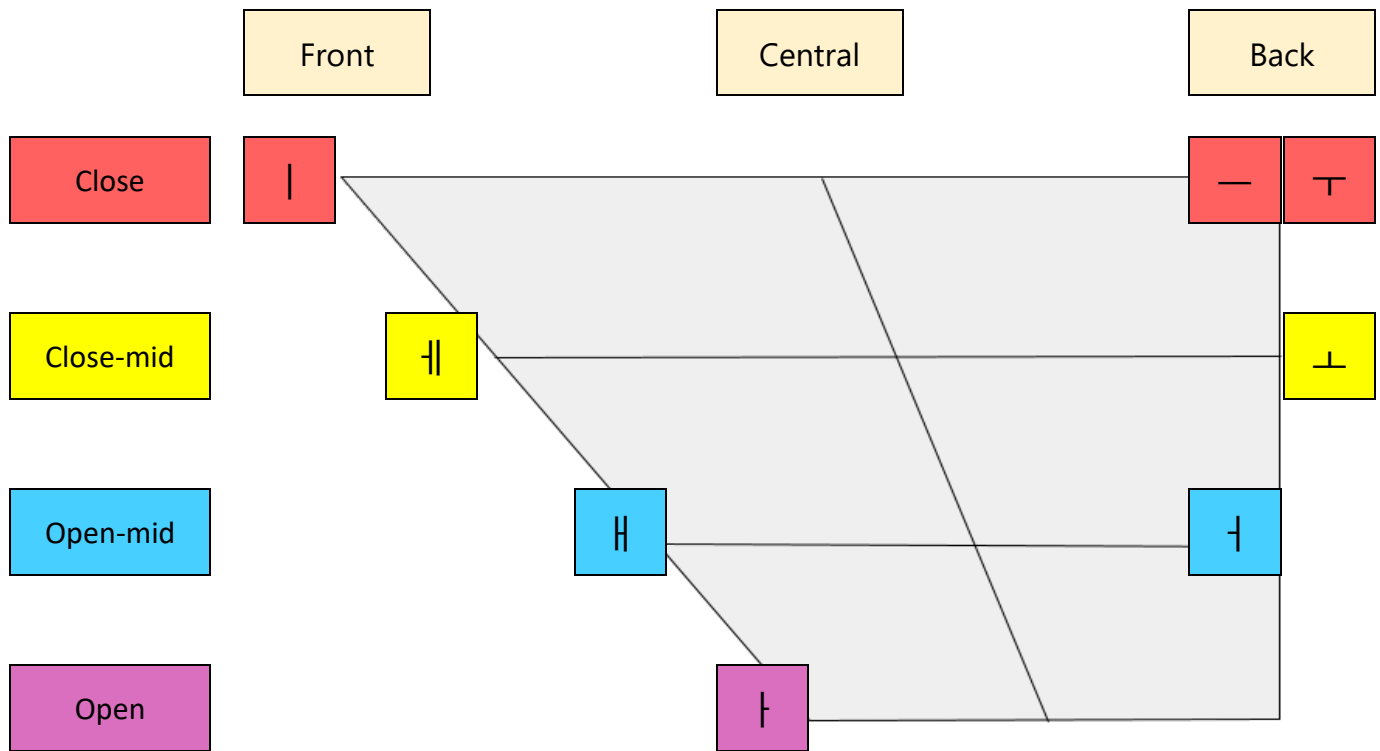
# Korean vowels, IPA



- Where symbols appear in pairs, the one to the right represents a rounded vowel.
- Of the symbols appearing singly, all are unrounded except for [o].
- Symbols appearing singly are unrounded.



# Korean vowels, Hangul



- Where symbols appear in pairs, the one to the right represents a rounded vowel.
- Symbols appearing singly are unrounded.



# References

I am grateful to several of my students who have allowed me to consult them in creating these charts: Pae Gilsu, Kang Jiyeon, Kim Sunghwan.

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