

Mandarin consonants, IPA

	Bilabial		Labio-dental		Alveolar		Retroflex		Alveolo-palatal		Velar	
Plosive	p				t						k	
Aspirated plosive	p ^h				t ^h						k ^h	
Affricate					ʈʂ		ʈʂ̺		ʈʂ̺̥			
Aspirated affricate					ʈʂ ^h		ʈʂ̺ ^h		ʈʂ̺̥ ^h			
Fricative			f		s		ʂ	ʐ	ɕ		x	
Nasal		m				n				ɲ		
Approximant		w						[ɻ]		j		
Lateral approximant						l						

- Where symbols appear in pairs, the one to the right represents a voiced consonant.
- Where symbols appear singly, they are placed to the left within their column if they represent a voiceless consonant, and to the right if they represent voiced.
- Symbols enclosed in brackets represent non-phonemic consonants.
- Blacked-out cells indicate phones judged to be impossible.
- Phones in the denti-alveolar column are laminar alveolars, pronounced with the tongue tip behind the lower front teeth (similar to the alveolo-palatals).
- The voiced retroflex fricative [ʐ] and the retroflex approximant [ɻ] are both realizations of the “R” phoneme. Neither has a greater claim to be considered the default, so the choice of [ʐ] to represent the phoneme is arbitrary.

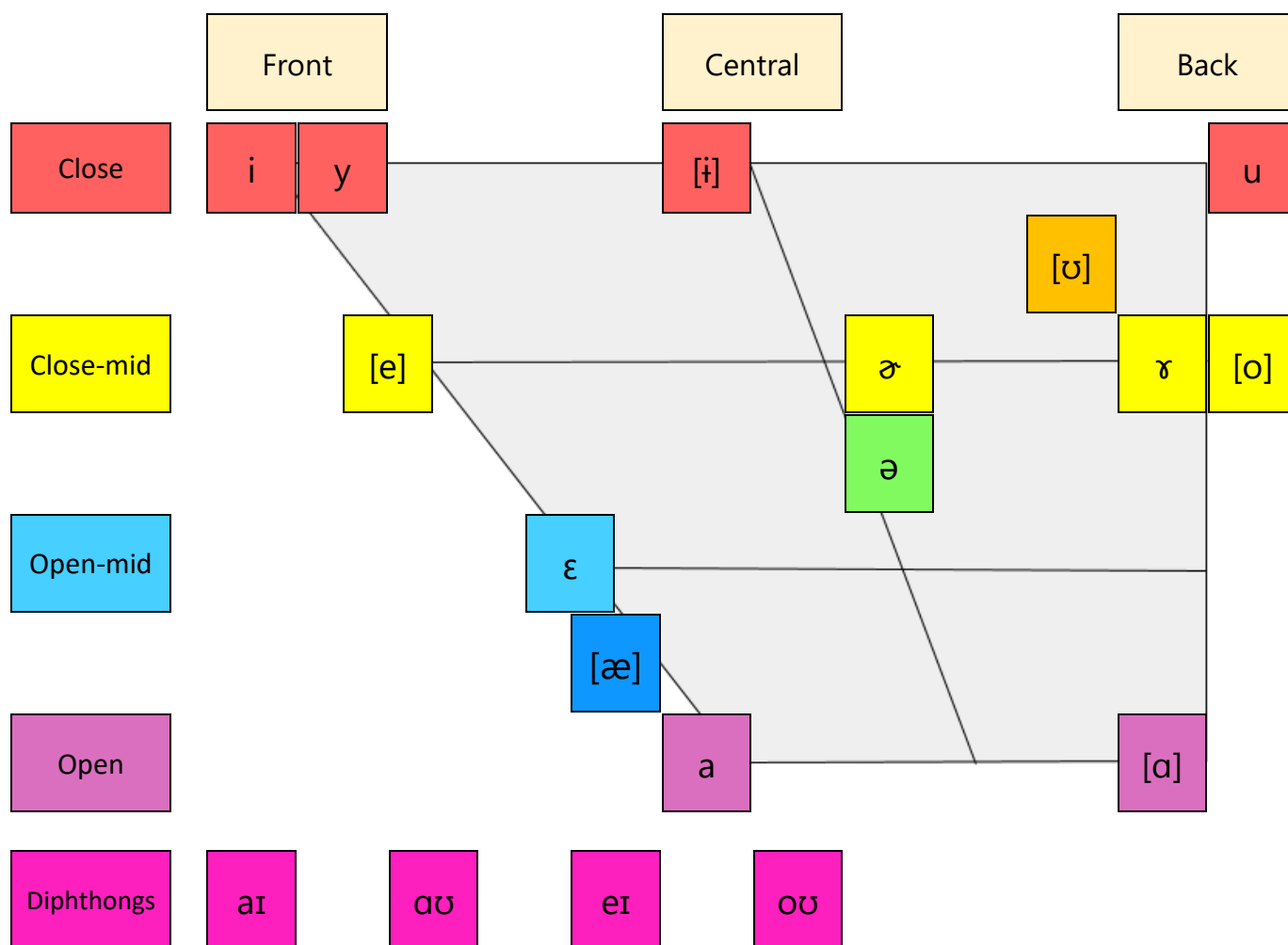
Mandarin consonants, Pinyin

	Bilabial		Labio-dental		Denti-alveolar		Retroflex		Alveolo-palatal		Velar	
Plosive	b				d						g	
Aspirated plosive	p				t						k	
Affricate					z		zh		j			
Aspirated affricate					c		ch		q			
Fricative			f		s		sh	r	x		h	
Nasal		m				n						ng
Approximant		w/u						(r)		y/i		
Lateral approximant						l						

- Symbols enclosed in parentheses represent non-phonemic consonants.



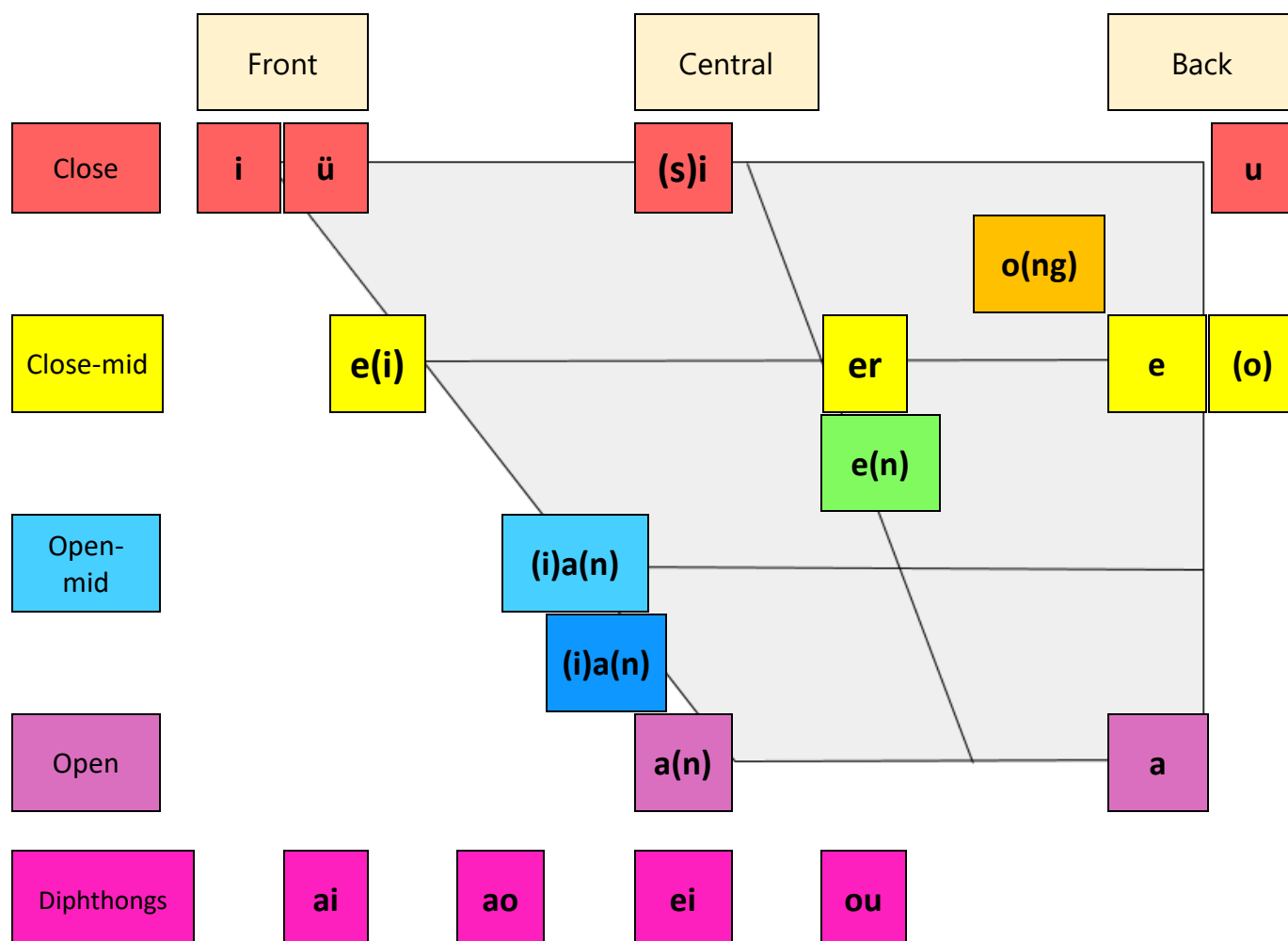
Chinese (Mandarin) vowels, IPA



- Symbols enclosed in brackets are non-phonemic vowels.
- Where symbols appear in pairs, the one to the right represents a rounded vowel.
- Where symbols appear singly, the close and close-mid back vowels are unrounded; all others are rounded.



Mandarin vowels, Pinyin



- Symbols enclosed in brackets are non-phonemic vowels.
- Where symbols appear in pairs, the one to the right represents a rounded vowel.
- Symbols shown next to phones inside parentheses indicate non-phonemic sounds. For example, **(i)a(n)** shows how /a/ sounds when between a front vowel and a final /n/.



References

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