

Typology of vowel systems

Linguistics 520, UNC-Chapel Hill
Elliott Moreton

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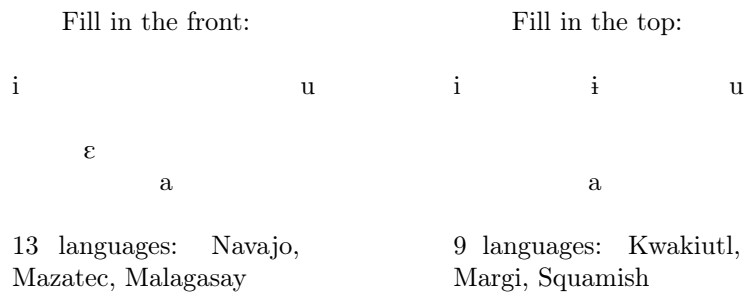
The following examples are from Crothers (1978). For a more up-to-date treatment, which reaches essentially the same conclusions, see Schwartz et al. (1997). Crothers used a database of 209 languages, balanced for language family and geographical area. He only considered the “basic” set (see his paper for the criteria of “basic”). The diagrams below show approximate locations of the vowel phonemes in the commoner systems.

3-vowel systems (the minimum in his sample, but see Ladefoged and Maddieson (1996, 286ff.)):



27 languages: Yupik,
Quechua, Tagalog, Aus-
tralian languages

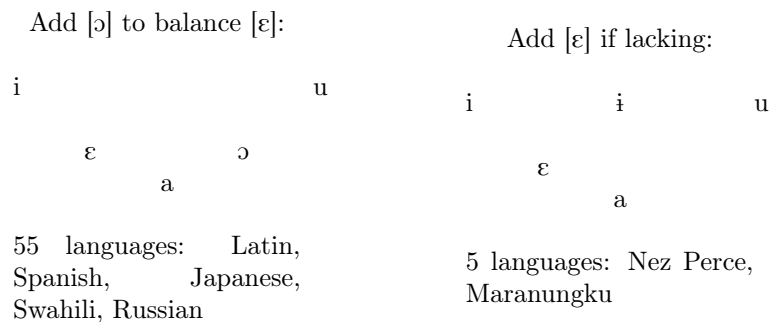
4-vowel systems bifurcate:



13 languages: Navajo,
Mazatec, Malagasay

9 languages: Kwakiutl,
Margi, Squamish

5-vowel systems are the most common type worldwide. They are also bifurcated:



55 languages: Latin,
Spanish, Japanese,
Swahili, Russian

5 languages: Nez Perce,
Maranungku

6-vowel systems:

i	i	u	i		u	i		u
				ə		e		o
ε	ɔ		ε	ɔ		ε	ɔ	
	a			a				

29 languages: Chuckchi, Delaware, Malayalam, Polish

7 languages: Lithuanian, Persian

7-vowel systems:

i		u	i	i	u
	e	ɥ		ə	o
	ε	ɔ			
	a			a	

11 languages: Italian, Bengali, Catalan

14 languages: Albanian, Mongolian, Amharic

8-vowel systems are rare (e.g., Turkish with /i ʌ ε a y u ɔɔ/).

9-vowel systems:

i	i	u
	ə	o
	ε	ɔ
	a	

7 languages: Lao

A system with more than 9 vowels is rare. One is French, with 11:

i	y		u
	e	ø	o
	ε	œ	ɔ
	a	ɑ	

References

- Crothers, J. (1978). Typology and universals in vowel systems. In J. H. Greenberg, C. A. Ferguson, and E. A. Moravcsik (Eds.), *Universals of human language*, Volume 2, pp. 93–152. Stanford, California: Stanford University Press.
- Ladefoged, P. and I. Maddieson (1996). *The sounds of the world's languages*. Oxford, U.K.: Blackwell.
- Schwartz, J.-L., L.-J. Boë, N. Vallée, and C. Abry (1997). Major trends in vowel system inventories. *Journal of Phonetics* 25, 233–253.