French and Spanish

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January 21, 2010

French oral vowels

Height	Vowel	example	Vowel	example	Vowel	example
	Front unrounded		Front rounded		Back	
High	i	vie	y	du	u	tout
Mid: tense	e	blé	ö	peu	o	mot
Mid: lax	ɛ	tête	œ	peur	ɔ	donne
Low:					a	plat

French nasal vowels

Height	Vowel	example	Vowel	example	Vowel	example
	Front unrounded		Front rounded		Back	
Mid: lax	ɛ̃	plein	œ̃	brun*	ɔ̃	bon
Low:					ã	dans

French glides

j	yeux, paille, pied
w	oui, Ouagadougou
ɥ	huile, lui

0.1 French consonants

	labial	alveolar	alveo-palatal	palatal	velar	uvular	laryngeal
Voiceless stop	p	t			k		
Voiced stop	b	d			g		
Voiceless fricative	f	s	ʃ				
Voiced fricative	v	z	ʒ			ʁ	
Nasal	m	n		ɲ	ŋ		
Liquid		l					
Glide	w			j ɥ			

Spelling	English	Québécois	Continental
tout, toute	all	tʊt	tu, tut
vous, nous	you, us	vu, nu	vu, nu
riz	rice	ri	ri
du	of the, some	ʤy	dy
vite	quickly	vɪt	vit
parler	to speak	paʁle	paʁle
Colette	(name)	kɔlɛt	kɔlɛt

Table 1: Québécois laxing (relâchement vocalique

Spelling	English	Québécois	Continental
petit	small	ptsi	pəti
tiroir	drawer	tsirwaʁ	tirwaʁ
diable	devil	ʤjab	djablə
Adèle	(name)	adɛl	adɛl
terre	earth	tɛʁ	tɛʁ
tâche	task	ta:ʃ(*or* tawʃ)	taʃ
tout	all	tʊt	tu
il dit	he says	i ʤi	i(l)di
elle dit	she says	aʤi	ɛldi
planter	to plant	plɑ̃nte	plɑ̃nte
torchon	dish towel	tɔʁʃõ	tɔʁʃõ
tiens	hold, take	tsjẽ	tjẽ
tuer	to kill	tsye	tye
dur	hard	ʤyr	dyr
diable	devil	ʤjab	djablə
dans	in	dɑ̃	dɑ̃
petite image	small picture	ptsitima:ʒ	pətitimaʒ

1 Spanish

Spanish vowels

Height	Vowel	example	Vowel	example	Vowel	example
	Front unrounded		Front rounded		Back	
High	i	vida			u	su
Mid	e	dedo			o	dedo
Low:					a	agua

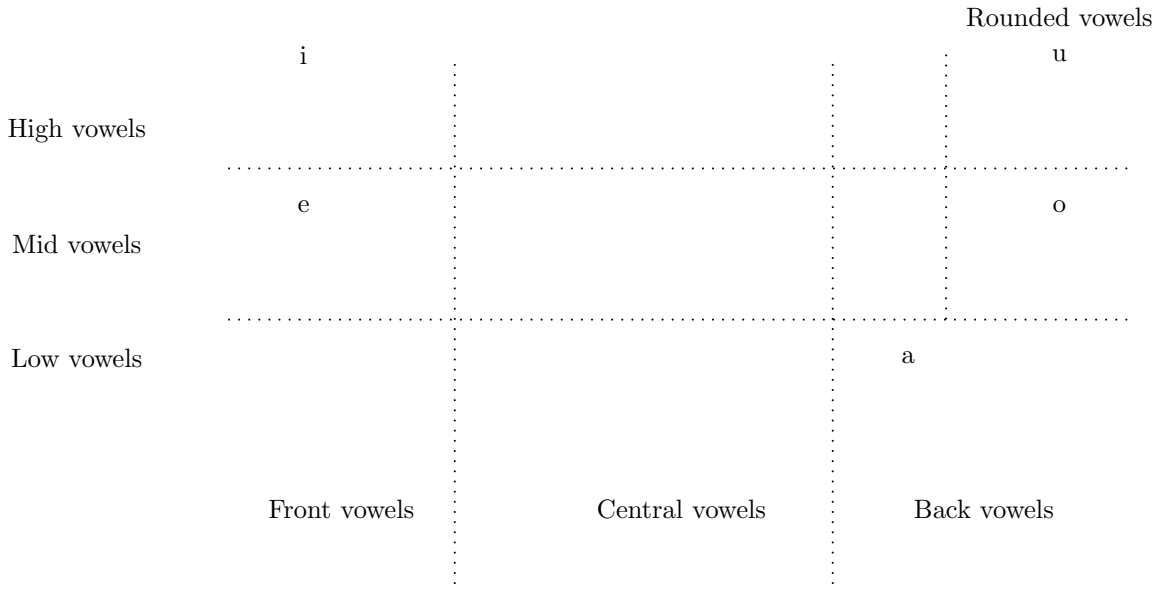

Figure 1: Spanish vowels

1.1 Spanish consonants

	bilabial	labio-dental	dental	alveolar	alveo-palatal	palatal	velar
Voiceless stop	p			t			k
Voiced stop	b			d			g
Voiceless affricate					ʧ		
Voiceless fricative		f	*θ*	s	(ʃ)		x
Voiced fricative	β		ð		(ʒ)		ɣ
Nasal	m			n		ɲ	ŋ
Lateral				l	ʎ		
Glide	w			j ɥ			

1.2 Spanish aspiration: educated Porteño

mas	more
mahɣrande	bigger
tomár	to take, to drink
tomás	you take (2nd sg.)
áɣwa	water
tomáhmasáɣwa	you take more water
moléhta	bothers (3rd. sg. verb present tense
bóhke	forest
áse	does (3rd. sg. verb present tense

1.3 Stop/spirant relationship

bala	ball
beso	kiss
suβeso	his/her kiss
umbeso	a kiss
elβeso	the kiss
darβesos	to give kisses
deðo	finger
eldeðo	the finger
suðeðo	his/her finger
miðeðo	my finger
undeðo	a finger
gato	cat
uŋgato	a cat
miɣato	my cat
elɣato	the cat

2 German velar fricative

In German,[1] we find two sounds corresponding to the spelling *ch*. One of them is a palatal fricative, [ç], as in the word *ich*, which means I, and the other is a velar fricative, [x], as in the word *Mach*. Most of the occurrences of these sounds occur after the first vowel of the word; here are some typical examples:

a.	Bu[x]	book	Bü[ç]er	books
b.	Lo[x]	hole	Lö[ç]er	holes
c.	Ba[x]	brook	Bä[ç]e	brooks
d.	Bau[x]	belly	Bäu[ç]	bellies
e.	i[ç]	I		
f.	bre[ç]en	break		
g.	Lei[ç]e	body (corpse?)		
h.	man[ç]	many		
i.	Dol[ç]	dagger		
j.	dur[ç]	through		

The examples in a-g suggest a simple generalization, and it does indeed hold for a very large proportion of the data: [ç] appears after a front vowel, and [x] appears after a back vowel. The examples in i-j illustrate another fact, which is that when we consider words where the ch appears after the first vowel and a consonant—we might say, in the environment $C_0VS\_$, where S can be n,l, or r—then we always find [ç]. It is not only tempting, it is nearly right, to say:

[1] Based on Orrin Robinson, Whose German?, passim. Moulton Modern German Juncture, p. 214, 1947, says

> The voiceless spirants [ç] and [x] are in complementary distribution with each other; [x] occurs only after central and back vowels and semivowels: [bʌx] 'brook', [na:x] 'towards', [nɔx] 'still', [ho:x] 'high', [bɣʊx]'breach', [bu:x] 'book',[ʔʌwx] 'also'; [ç] occurs only after front vowels and semivowels, and after consonants: [mɪç] 'me' [pʻɛç] 'hard luck', [kʻɣi:çt] 'crawls', [ne:çst] 'next', [hø:çst] 'highest', [ɣʌjç] 'rich',[ʔɔjç] 'you', [ʔɛlç] 'elk', [mœnç] 'monk', [dʊɣç] 'through'. We may therefore analyze [ç] and [x] as allophones of a single phoneme /x/.

In German, the phoneme /x/ surfaces as [x] immediately after a back vowel, and as [ç] elsewhere.

a.	Frau[ç]en	mistress (of an animal)
b.	Häus[ç]en	little house
c.	Kuh[ç]en	little cow