

French is a Romance language of the Indo-European family spoken in France and many other parts of the world. Many dialects of French have both voiced and voiceless versions of uvular trills [ʀ ʀ̥], alveolar laterals [l l̥], and bilabial nasals [m m̥]:

ekʀiʀ	'to write'	klemã	'merciful'
ʀym	'cold/flu'	film	'film'
tɔʀdʀ	'to wring'	limite	'limited'
pɛʀs	'Persian'	ʀymatizmal	'rheumatic'
il	'island'	liʀ	'to read'
tabl	'table'	levʀ	'lip'
kasabl	'breakable'	plɛziʀ	'pleasure'
ɛl	'she'	trivjal	'trivial'
mɛʀ	'mother'	rali	'race-meeting'
simetrikmã	'symmetrically'	rɔ̃fle	'to snore'
tɛʀm	'term'		
ɛtʀ	'to be'	pœpl̥	'people'
ʃifʀ	'number/figure'	ɔ̃kl̥	'uncle'
mɛtʀ	'to put'	tãpl̥	'temple'
mɛkɔ̃nɛtʀ	'to fail to recognize'	ʀitm̥	'rhythm'
		ʀymatizmə	'rheumatism'

(Katamba 1989)

- For each of the pairs [ʀ ʀ̥], [l l̥], and [m m̥], determine if the two sounds in the pair represent distinct phonemes from each other, or if both sounds are allophones of the same phoneme.
- For each pair that consists of separate phonemes, cite and fully discuss (near-)minimal pairs and the contrastive distribution that justify their phonemic status.
- For each pair that consists of allophones of the same underlying phoneme, state in clear prose what their complementary distribution is, citing relevant examples from the data, and determine what the best choice for underlying phoneme is. Justify your choice with discussion of simplicity and/or naturalness, as appropriate.

Then for these pairs, write formal phonological rule(s) that can derive the correct allophones in the correct environments. If you can combine any of your rules into a single rule that accounts for all of the relevant data, do so instead of writing individual rules, but discuss your combined analysis thoroughly, paying special attention to the predictions your combined rule might make for the behavior of other sounds in the language. Remember that it is okay to over-generalize if you have not yet been given data that contradicts your generalization.

- Give derivations for a few representative words fully showing how and when to apply (and not to apply!) the final version of your rule(s) in part c.