

# **Finnish Phonotactics**

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We heavily used the Kari Suomi textbook, *Finnish Sound Structure*, co-written with Juhani Toivanen and Riikka Ylitalo. Other authors' papers were used to confirm this information, including Arto Anttila, Thomas Berg, John Goldsmith, and Scott Myers.

We also consulted with some Finnish speakers for this project. We communicated with a native Finnish speaker, Mette Laine for confirmation of some phonological information we found online. Lastly, many pronunciation guides came from a C1 Finnish learner, August Blackham.

This presentation is based on the **Standard Finnish** dialect, spoken mostly in the Southern areas of Finland, and also used by professional speakers of Finnish.

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## **Part 1 — Phoneme inventory and phonotactics**

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## Consonant Inventory (Suomi et al, 2008, p 23.)

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Palatal	Velar	Glottal
Plosive	p (b)		t d				k (g)	(ʔ)
Nasal	m		n				ŋ	
Trill			r					
Fricative		f v		s	(ʃ)			h
Approximant	ʋ					j		
Lat. Approx			l					

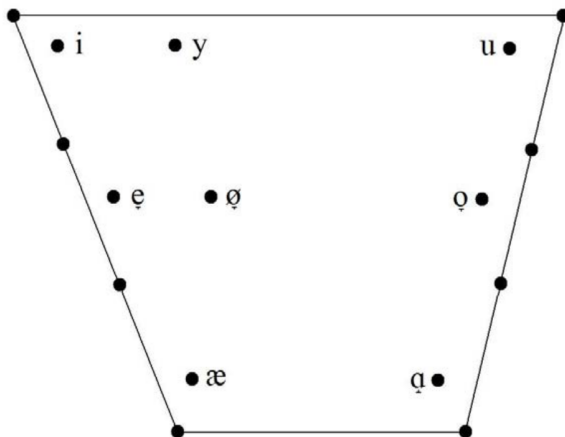
## Notable Properties

- Typically, /t/ is realized as [t̪], whereas /n/ and /d/ are alveolar
- Fricatives are rare, and typically only found natively in Southwestern dialects. /f/ is typically able to be distinguished, but /s/ vs. /š/ [ʃ] is not.
  - Though, the example of šakki (chess) and sakki (a gang of people) is typically distinguished. (Laine, 2022)
  - The orthography also includes /z/ and /ž/, but is rarely used except for loan words.
- The /d/ is also usually realized as a tap or flap [ɾ] rather than the true plosive [d]. (Laine, 2022)
- The glottal stop is not in the orthography, but rather used to separate two adjacent vowels across syllable boundaries in a Sandhi phenomenon. (Suomi et al, 2008, p. 46.)

- /b/ and /g/ used to only be found in loaned words, but has made its way into Finnish orthography. (Laine, 2022)
  - Some words that show these voiced plosives as minimal pairs to their unvoiced counterparts are /gorilla/ (gorilla) and /korilla/ (on a basket). (Laine, 2022)
- In addition, /d/ is sometimes assimilated to [t]. (Laine, 2022.)



## Vowel Inventory (Suomi et al, 2008, p. 20)



## Diphthongs (Suomi et al, 2008, p. 49)

	/-i/	/-u/	/-y/	Opening diphthongs
/a-/	ai [a <sub>ɪ</sub> ]	au [a <sub>u</sub> ]		
/æ-/	äi [æ <sub>ɪ</sub> ]		äy [æ <sub>y</sub> ]	
/o-/	oi [o <sub>ɪ</sub> ]	ou [o <sub>u</sub> ]		
/e-/	ei [e <sub>ɪ</sub> ]	eu [e <sub>u</sub> ]	ey [e <sub>y</sub> ]	
/ø-/	öi [ø <sub>ɪ</sub> ]	öy [ø <sub>y</sub> ]		
/u-/	ui [u <sub>ɪ</sub> ]			uo [u <sub>o</sub> ]
/i-/		iu [i <sub>u</sub> ]	iy [i <sub>y</sub> ]	ie [i <sub>e</sub> ]
/y-/	yi [y <sub>ɪ</sub> ]			yö [y <sub>ø</sub> ]

# Notable Properties

- Nasalization (Laine, 2022)
  - Finnish vowels undergo nasalisation in the vicinity of nasal consonants.
- Vowel Harmony (Laine, 2022)
  - In Finnish, the back vowels a, o and u only appear with each other and e, i.
  - Likewise, the front vowels ä, ö and y only appear with each other and e, i
  - These rules apply to most non-compound, non-loaned words.
- Doubled vowels (Suomi et al, 2008, p. 22)
  - In Finnish, doubled vowels (e.g. *öö* vs. *ö*) are minimal pairs.
  - E.g. *tuuli* (wind) vs. *tulli* (customs at a border crossing)

The general syllable structure is CVC, with occasional doubled vowels, and doubled consonants mostly from loaned words.

# Phonotactics (Suomi et al, 2008, pp 49–61.)

- Vowels
  - All vowels can occur doubled, and there are 18 diphthongs. In addition, sequences of 3–4 vowels can occur, which come from shorter subsequences of vowels and/or diphthongs.
  - Vowel harmony
- Consonants
  - / p t̪ k s h l r m n j ʋ d f b g ʃ / all occur word initially.
  - Additionally, / pl pr t̪r kl kr/ are plosive + liquid sequences that can occur word initially, as do / sp sk st̪ / . Very rarely, word initial CCC sequences can occur: / spr st̪r /
  - Word internally, all C sequences, except /ŋ/ can occur

## Phonotactics — Consonant Sequences (Suomi et al, 2008, pp. 55–58.)

- Doubled consonants can occur at syllable boundaries.
- There are some other rules that are usually only violated in the case of loan words:
  - A nasal cannot follow a plosive
  - /l/ and /s/ cannot be followed by /r/
  - A liquid cannot follow a nasal
  - A consonant cannot follow a central approximant
  - /h/ cannot follow an obstruent
  - A central approximant cannot follow plosives other than /t̚/
  - A heterorganic consonant cannot follow a nasal
  - A labial plosive cannot be followed by a non-labial plosive, and vice versa
  - A dentalveolar plosive cannot follow a velar plosive.

## Phonotactics cont. (Suomi et al, 2008, pp 58–61.)

- CCC sequences — word-internal
  - In word-internal CCC sequences, there is always a syllable boundary before the last consonant.
- Word-final consonants
  - In native words, only /t/, /s/, /n/, /l/, and /r/ occur word finally.
  - In loaned words, many attempts are made to avoid ending consonants by adding a vowel to the end, much like Spanish's leading vowels for loan words.
- More rules
  - #CV restrictions: /ji/, /je/, /uu/ are prohibited.
  - #VV restrictions: /ii/, /ie/, /uo/ are prohibited / rare.
  - #(C)VVCC restrictions: complicated.

## **Part 2 — Phonological Processes**

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## Conditioning of Central Approximants

In Finnish, these sounds occur in syllable onsets, and the phoneme /v/ has two allophones: (Suomi et al, 2008, p. 31)

$$/v/ \rightarrow \begin{cases} [w] & / \text{ after diphthongs ending in } u \\ [v] & / \text{ elsewhere} \end{cases}$$

These are demonstrated in the below words/phrases:

*sauva* [sauwa]      *rouva* [rouwa].

## Allophones of /h/

In Finnish, the letter h appears in syllable and word final and initial positions. Consider some pronunciations of the following words (Suomi et al, 2008, p 28).

*vihma* [viçma]

*pihvi* [piçvi]

*lyhty* [l<sup>w</sup>yçty]

*vihje* [viçjɛ]

*vihko* [viçk<sup>w</sup>o]

*tahma* [taxma]

*kahvi* [kaxvi]

*tuhti* [tuxti]

*kohme* [koxme]

*tuhka* [tuxka]

*vihi* [vifi]

*vähä* [væhæ]

*vaha* [vaɦa]

*haamu* [ɦa:mu]

*tähti* [tæhti]

*lehvä* [lehvæ]

## Allophones of /h/

Based on the above, the following rule was proposed by Suomi et. al, on page 28:

$$/h/ \rightarrow \begin{cases} [\text{ç}] & / \text{ between a high front vowel and a consonant} \\ [\text{x}] & / \text{ between a back vowel and a consonant} \\ [\text{ɦ}] & / \text{ between vowels, especially word-internally} \\ [\text{h}] & / \text{ elsewhere} \end{cases}$$

Note that the fricative allophones [ç] and [x] occur syllable finally, while the glottal allophones occur syllable initially. (Suomi et al, 2008, p. 28)

## Sources

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