Basics of NAVLIPI

Introducing NAVLIPI

NAVLIPI (see *https://navlipi.org/*) is a new (2012) world alphabet (universal script, universal alphabet, world orthography) usable for all the world's languages.

NAVLIPI was invented specifically to address *phonemic* [**] characteristics unique to languages, which make it difficult, e.g., to write Hindi and Tamil, or Mandarin and English, in the same alphabet.

So someone wanting to read or write very varied languages from all over the world in a *single* alphabet would use NAVLIPI.

[**A **phone** is any sound. A *phoneme* is a phone with linguistic significance. The test for a phoneme in a particular language is if substituting one phone for another in a word *changes the meaning of the word*. Thus in English, **p**et and **b**et have entirely different meanings, so the *phones* (sounds) **p** and **b** are different *phonemes* in English. But in Mandarin, **p**u and **b**u both mean "no/not", so **p** and **b** are part of (are *allophones* of) the same *phoneme* in Mandarin. Similarly, in English *vet* and *wet* have entirely different meanings, so the sounds **v** and **w** are different phonemes in English. But in Hindi, **v**an and **w**an both mean "forest", so **v** and **w** are the same phoneme in Hindi. A *phonemic* alphabet needs to be able to convey this information.**]

NAVLIPI is based on the Latin (Roman) alphabet, and uses the 26 letters (characters) of this alphabet as used for English, plus just the following 13 additional letters (whose use is described below), plus 2 letters indicating aspiration and fricatization, plus 4 symbols (used for tones), for a total of **44** letters/symbols:

- (*Letters borrowed from Greek*): **Ω**, **ɛ, ɲ.**
- (*Transformed letters*): **ɔ** (inverted-**c**), **ɺ** (inverted-**j**), **ʑ, ŧ, đ.**
- (*Repurposed letter*): **q.**
- (*New letters*): **ʓ**, **r̂, ɬ, η**.
- (*Letters used to indicate aspiration and fricatization, respectively*): **h₀, h_φ.**
- (*Symbols used for tones in tonal languages*): **⎮, ⎦ , ⎰ ᴗ, ⎾**

NAVLIPI is a *phonetic* alphabet, conveying accurate phonetic information. It has a one-to-one correspondence of its letters with sounds (phones). It is also a *phonemic* alphabet, *conveying and encoding phonemic* information, the first alphabet to do so.

NAVLIPI also expresses tones, clicks and creaky sounds (for those languages that have these) very easily and intuitively. NAVLIPI uses no diacritics (accent marks). And it *does* distinguish between upper and lower case (where, e.g., the Indian alphabets don't).

Simple, intuitive NAVLIPI **keyboards** for phones/tablets are available free from the Google Play and Apple Store; and for Windows-PC/MAC laptops, also free, from the *NAVLIPI* website.

It is important to note that *just these **44** letters/symbols* of NAVLIPI (and the *single* keyboard for Windows PC and MAC) can be used to write **all** the languages of the world, including tonal and click languages. And NAVLIPI can also be used to accurately represent languages *phonetically,* and for discussions about different languages, both phonetic and phonemic.

NAVLIPI is starting to be used for communication at meetings of the academic linguistics community in India, as a bridge alphabet when presenting work on totally different Indian languages, such as Malayaalam and Hindi. Being very recognizable due to its origins in the Latin alphabet, it avoids scholars having to learn entirely new alphabets (e.g. Malayaalam or Hindi/Dewanaagari). It is also starting to find use in Natural Language Processing and Computational Linguistics.

For comparison, the alphabet of the *International Phonetic Association* (*IPA Alphabet*) currently (2024) has 173 letters, and *does **not** convey or encode phonemic information* in the way that NAVLIPI does. It is widely used by specialists, but, to date, by no world language as its main alphabet. Its many letters are difficult to recognize and distinguish, and it is very cumbersome to keyboard. It also has some errors and incompleteness for non-European languages, stemming from its Eurocentric origins.

The **Figure** below shows the entire NAVLIPI keyboard for Windows PC (see NAVLIPI_Keyboard_Layout on this website for a downloadable pdf of a fuller version of this).

Again, to emphasize, this single keyboard can be used to write **all** the languages of the world and to accurately represent these languages *phonetically* as well as *phonemically.*

In the keyboard layout below, **DK** keys are in **red**. Dewanaagari or Tamil equivalents in **blue**, parentheses. **Legend** :
A legend is shown *at right*.

The Nuts and Bolts of Using NAVLIPI

FOR ALL LANGUAGES:

Common vowels:

- **a** as in English *but*, Hindi अ
- **e** as in English *bet*; **ee** (long vowel) English *fair*, vowel in Hindi है
- **ε** as in English *gray*, Hindi ए, Spanish *que*
- **Ω** as in English *ball*, vowel in Hindi कौन
- **ɔ** (inverted-**c**) as in English *Jack*, vowel in Hindi मैं
- **q** as in English *about*, 2nd vowel in Hindi यन्त्र; (this is the "schwa")
- **y** as in French *tu*, German *über* .
- **o//** French *feuille*; **o/** German *schön*

Long vs. short vowels:
Long vowels by reduplication: So:

- short **i (इ)** ⇨ Long **ii (ई)**;
- short **u (उ)** ⇨ Long **uu (ऊ)**, etc.

An exception: Long vowel in English *father*, Hindi आ ⇨ **aa**.

Corresponding short vowel, used commonly in Dravidian languages ⇨ **aa$_o$**.

Common non-vowels (consonants):

- **j** as in English *yes*, Hindi य
- **ʝ** (inverted-**j**) as in English *Jack* Hindi ज
- **c** as in Spanish *chica,* Hindi च

r-sounds:

- *"Rolled" or "trilled" r-*sound (as in Spanish, Hindi, etc.): **rr.**
- Extra-trilled (as in Spanish *perro*): **rrr.**
- Semivowel *r*-sound, as in standard English: **r.**
- Vowel (vocalic) *r*-sound (as in Dewanaagari (Hindi) ऋ, American English *r*-sound): **r̂.**

Nasals:

- Nasalization as tilde symbol (**~**); placed *after* syllable nasalized. Thus:
  - Hindi हाँ ⇨ *haa~.*
  - French *mon* ⇨ *mo~.*
  - Portuguese *Saõ* ⇨, *Saao~.*
- Velar nasal **n$_o$** (Dewanaagari ङ, English *king* ⇨ *kin$_o$g*);
- Palatal nasal **η** (Dewanaagari ञ, English *inch* ⇨ *iηc*)

Aspiration (महाप्राण):

➢ Add **h₀** to letter being aspirated. Thus:

- **k** (Hindi क) ➪ **kh₀** (ख)

- **p** (Hindi प) ➪ **ph₀** (फ)

Fricatization (hissing sound):

➢ Add **h_φ** to letter being fricatized.

> ➢ *Special cases*:

> ▪ English *sh*ot (Hindi श) ➪ **sh_φ**

> ▪ English *plea*s*ure,* Russian **ж** ➪ **zh_φ**
> ▪ Velar unvoiced fricative **x** (also writable as **kh_φ,** as in Scots *loch*)
> ▪ Velar voiced fricative **ɤ** (also writable as **gh_φ**)

Tones:
- Placed *after* syllable having the tone.
- See under *Mandarin* below for symbols for 4 Mandarin tones.
- For languages with more than 4 tones, e.g. Cantonese (6 tones), Thai (5 tones), combinations of these symbols are used.

Stress accents (where significant, e.g. in Spanish):
- Apostrophe ('), placed *after* the accented syllable. E.g. Spanish *aqui'*

Clicks:
- Ingressive click, e.g. in South African languages such as !Xo. Letter **z** with strikethrough, placed *after* the sound being clicked: **ƶ**. Thus, dental click ("tsk tsk"): **tƶ**. Lateral ("giddyap horse") click: **lƶ**

FOR SPECIFIC LANGUAGE GROUPS:

English, West European, Slavic languages:
- Alveolar unvoiced **t**-sound as **tt**; alveolar voiced **d**-sound as **dt**
- Unvoiced, voiced dental fricatives: English *th*in ➪ **th_φ***in*, *th*is ➪ **dh_φ***is*

Hindi, other Indian languages:
- Retroflex (मूर्धन्य) non-vowels (consonants, *ट, ठ, ड, ढ, ण*) as **ṭ**, **ṭh₀**, **ḍ**, **ḍh₀**, **ṇ**. Fricative (ष) as **ṭh_φ**
- Flaps: add dot (.) *after* parent plosive. Thus *ट. ड. ण.* become **ṭ. ḍ. ṇ.**
- Vowel (vocalic) **r**-sound (ऋ): **r̂**
- Wisarga (visarga, glottal stop): as colon (**:**)
- Diphthongs ऐ, औ, if actual diphthongs: **aaɛ**, **aau**. But these are frequently pronounced as vowels (cf. मै, है, कौन)
- Retroflex Tamil **l**-like sound (**zh** in Latin transcription): **ḷ**

Arabic:
- Unvoiced uvular **k**-sound (**q** in Latin transcription), add two dots: **k..**
- Pharyngealized (faucal) dentals **t-**, **d-** as **t..**, **d..**

Mandarin:
- Alveolar fricative **hs**-sound (**X** in Latin transcription, as in *Xie Xie* "thank you"): **tth$_\varphi$**
- 4 standard tones: Placed *after* syllable having tone:
    - **1st** tone, high and level (│)
    - **2nd**, rising (⌡)
    - **3rd**, falling-rising (⌠ ‿)
    - **4th**, low, falling (⌐)

Select African languages:
- "Velarized" bilabials **kp**, **gb** (e.g. the **Igbo** language)
- Initial nasals as **~ .** E.g. ***Ng**oma, **Ng**aangaa, **Mb**eki* as **~gomaa,~gaa~gaa, ~bƐki**.

PHONEMIC RENDITIONS:
(Different sounds which are part of the same phoneme in these languages.)

Hindi
- **vw** for both **v**, **w** sounds,
- **ph$_8$** for both **f**, **ph$_o$** (aspirated-**p**) sounds

English
- **p$_o$** for both **p** and **ph** sounds
- **tt$_o$** for both alveolar **t**, **th**-sounds

Standard Parisian French, German (Hochdeutsch)
- **xr** for both "throaty-**r**", "rolled-**r**"

Mandarin
- **b∞** for both **p-**, **b**-sounds
- **d∞** for both alveolar **t**, **d**-sounds

Tamil
- **t$_o$** for both dental **t**, **th** sounds

***For more detail on using NAVLIPI, see the the NAVLIPI website** (https://navlipi.org/).*
In particular, it is suggested to visit the following first:

- The various sub-Tabs under Tab ***World Alphabets in NAVLIPI,*** e.g. for Dewanaagari (Devanagari, NAVLIPI: Dewanaagari).
- Tab *NAVLIPI Basics Download* (NAVLIPI Basics Download) for a pdf copy of this BASICS description.