

Feature Pad Tutorial

To use FeaturePad on your computer (sorry, Windows only): visit

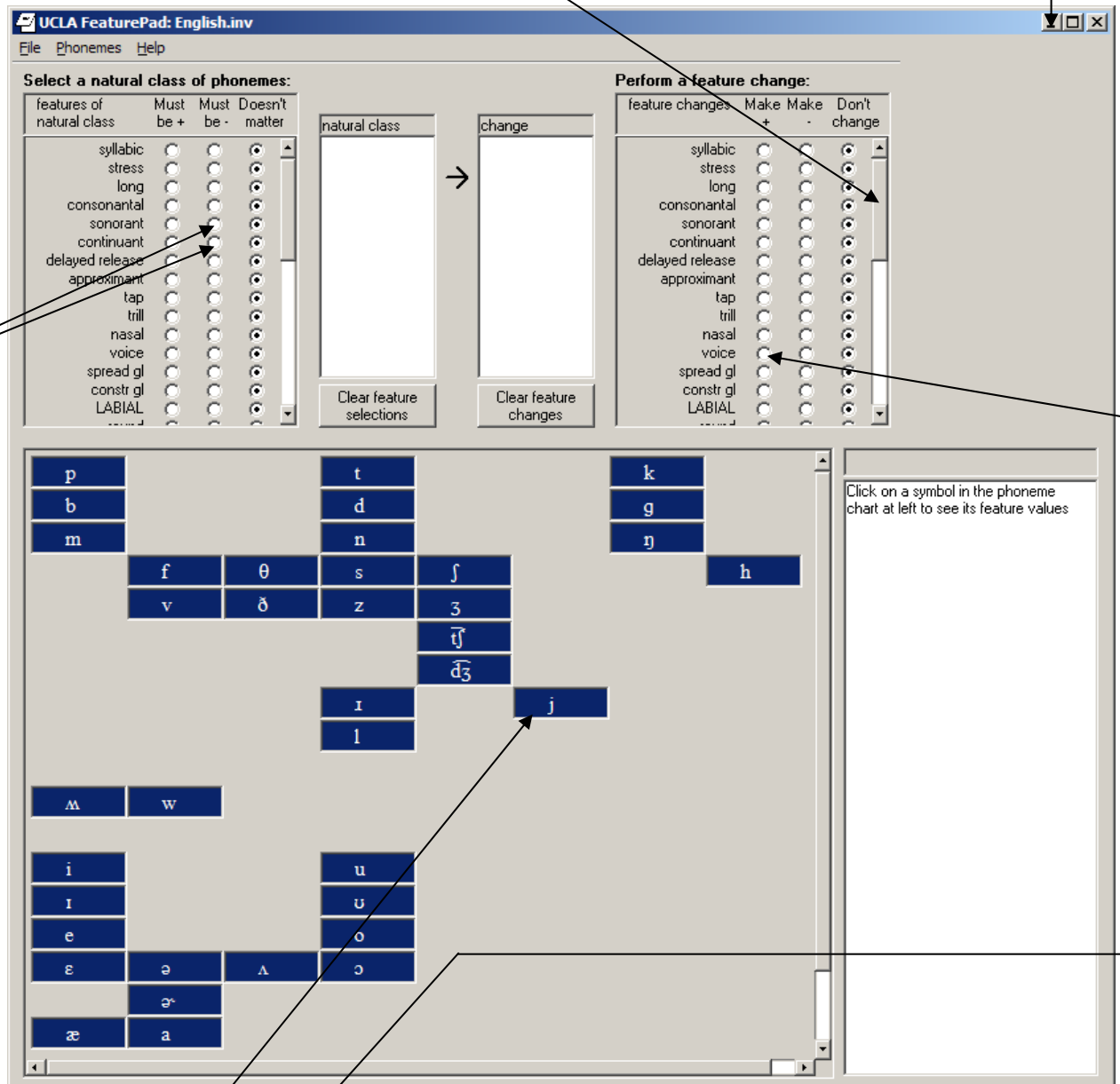
<http://www.linguistics.ucla.edu/people/hayes/120a/FeaturePad.htm>

and follow the instructions there.

If you installed FeaturePad in the usual way, you will find the program at **c:\Program Files\FeaturePad\FeaturePad.exe**. Click on this to start the program. You will first see a choice of languages. Pick “English.inv” (Inventory for English), then Open. It will look like the following page.

Click here to make the interface bigger and easier to use: _____

Note that the phone window has scroll bars you can use to view the hidden phones.



- Now click here, and you will see the features for /j/ at the lower right of the interface.
- Now click in these two places, and you will find that only the [-sonorant, -continuant] segments remain highlighted. These are [f, θ, s, ʃ, h, ʌ].
- Now click here and you will find that you have turned all of these the highlighted sound into their [+voice] equivalents. The ones that were already [+voice] did not change.
- There are buttons labeled **Clear feature selections** and **Clear feature changes**, which you can use to make new choices.
- Next, let us see what it would take to change /ɪ/ into [ɪ].

- Single out /ɹ/ on the left side of the arrow using [–syllabic, –consonantal, +coronal].
- In the **Perform a feature change** window, click on the obvious choice: [+lateral]. You’ll find that this turns /ɹ/ into some combination of features for which there isn’t an IPA symbol.
- Click on this symbol-less thing, and look at the lower right hand of the screen to see its features. Then click on /l/ and look at its features. If you keep doing this, it will become apparent that the additional features you have to change are [–consonantal, +anterior, –distributed]. If you change all of them, you will get an [l].
- You may find, as I did, that in the pairs of (**Error! Reference source not found.**) above, more features are changing than you may have thought.

Practice exercises

Use the English inventory in FeaturePad. Express the following rules in features. Note that FeaturePad may light up in red if you use more features than necessary. Experiment with removing them until you’ve solved the problem.

Hint: note that to change voiced fricatives to voiceless fricatives, you *don’t have to say that the input must be voiced*. The reason is that you can simply use the features to say “fricatives become voiceless”. The fricatives that are already voiceless will harmlessly undergo the rule and remain voiceless. FeaturePad is a real stickler for this point...

1. $l \rightarrow \emptyset / [\text{word } [t, d, \theta, \delta] \text{ } ____]$ (expresses a true fact about English)
2. $[v, \delta, z, ʒ] \rightarrow [f, \theta, s, ʃ] / \text{word initially before a liquid}$ (expresses a true fact about English)
3. $[b, g] \rightarrow \emptyset / [m, n, \eta] \text{ } ____]_{\text{word}}$ (English *bombard* ~ *bomb*, *prolongation* ~ *prolong*)
4. $[i, ɪ, e, \varepsilon] \rightarrow [u, ʊ, o, ɔ] / [w, \text{ʌ}] \text{ } ____]$ (modeled on Yana)
5. $[n, t, d] \rightarrow [n̥, t̥, d̥] / \text{ } ____ [\theta, \delta]$ (English *ten* ~ *tenth*)
6. $[i, e, o, u] \rightarrow [ɪ, \varepsilon, ɔ, ʊ] / \text{ } ____ \text{CC}$ (modeled on Hausa and many other languages)
7. $[b, d, \widehat{d_3}, g, v, \delta, z, ʒ] \rightarrow [p, t, \widehat{t_3}, k, f, \theta, s, ʃ] / \text{ } ____ [p, t, \widehat{t_3}, k, f, \theta, s, ʃ, \text{ʌ}, h]$ (“Regressive Voicing Assimilation; Russian, Polish, French, etc.)
8. [l] becomes a copy of the following consonant, where following consonant is $[t, d, \widehat{t_3}, \widehat{d_3}, \theta, \delta, s, z, ʃ, ʒ, n, l, r]$ (modeled on Arabic)
9. $[t, d] \rightarrow [\widehat{t_3}, \widehat{d_3}] / \text{ } ____ [i, j]$ (Alveolar Palatalization, Eng. *gotcha*)
10. $[k, g] \rightarrow [\widehat{t_3}, \widehat{d_3}] / \text{ } ____ [i, ɪ]$ (Velar Palatalization: Hausa, Slavic)