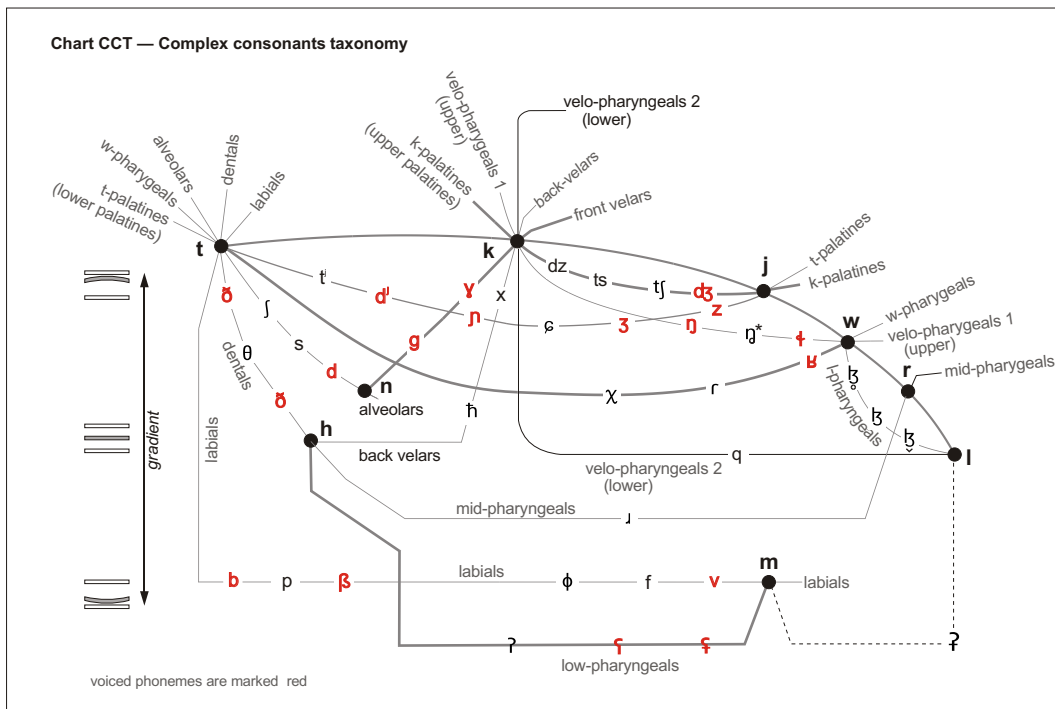


## THE COMPLEX CONSONANT CHART



Each consonant has a specific anchor point, where forces producing them in the tongue intersect. This chart shows the organization of consonants according to their lingual anchors. The consonants are pure articulations, without any vowel or syllabic components.

The consonants marked in bold type and with bullets, all lying on the periphery, except for /n/, are what we can call the “parents” and those situated on connecting lines between are the “children”.

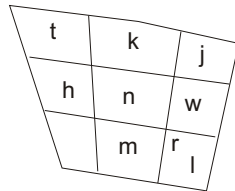
Starting from one parent, and by perceiving and tracing the lines, it is possible to go smoothly to the other parent at the other end of the line, or to any of the intermediary children and to eventually reach the other parent. That is, the children are generated on the connecting line at the anchor points lying between the parents. The specific consonant produced is determined by the distance of its node between its parents. For example, /d/ is closer to /n/ than it is to /t/. The fact that their anchors are adjacent lies behind the fact having a cold makes one produce /d/ for /n/. Moving directly between any consonants, whether parents or children, that lie on different lines, e.g., from /k/ to /m/, or from /v/ to /s/ is noticeably obstructive—to do so requires connecting vowels, i.e., the use a syllabic structure. There are anchor points between /t/ and /k/ or between /j/ and /w/, as well, but these do not generate useable speech sounds.

To physically perceive, feel this organic matrix of consonant we can articulate and hold on to both members of a parent pair and move between them along the connecting line. Alternately, we can articulate and hold on to one parent and then locate by trial and error the child easiest to reach. Both methods will give the same results.

This scheme may have application in teaching the deaf.

(Complex consonants, continued)

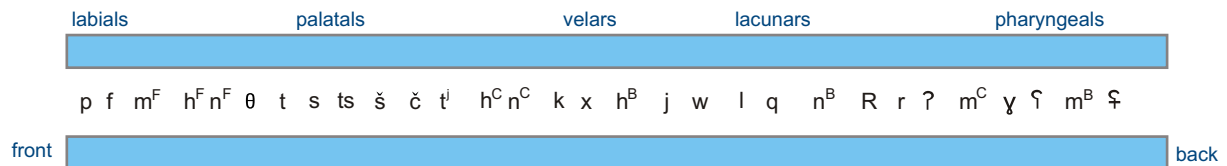
The consonant quadrilateral



When the places of parent consonant anchors are perceived they appear to be distributed in a boxes that matches those of the vowel quadrilateral.

THE ORDERED LINE OF CONSONANTS

The ordered line of voiceless consonants



While articulating the row of consonants in the order of succession as illustrated, starting at the front end, it can be observed that the articulation anchor points of all (voiceless) consonants within the tongue naturally fall into this specific order. The points can be sensed whether in the top, middle or bottom layer of the tongue, but the path must be consistently followed, without changing to another level. Leaving out phonemes on the line cannot smoothly take place. The consonants can be whispered, or pronounced fully. A particular consonant can thus be found by relating its position to another one.

This scheme may have application in teaching the deaf.

superscript:	ʔ glottal stop
F = front	ʕ 'ayin
C = central	ɣ 'ghayn
B = back	ɸ epiglottal stop