Appendix 4. The location of the function anchors in the /p/-epiglottal stop tract

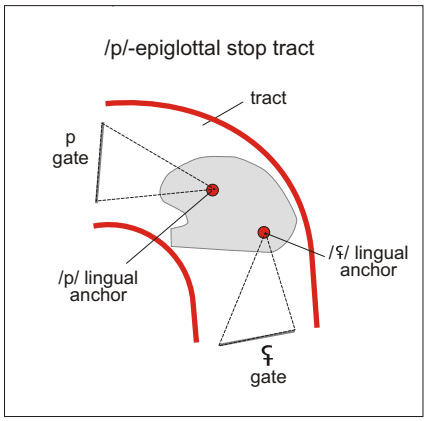
Note: The structure described in the following appears in the state preparatory to speech production, i.e., in the envelope of speech but without any effort to articulate, phonate or otherwise influence tract shape. I.e., nasally breathing in the speech framework that is resting in equipoise at tonic tension levels, but not yet in the speech respiratory frame.

The /p/-epiglottal stop tract

When seen as an anchoral framework, the region of the upper visceral, or respiratory-masticatory tract comprising the oral and pharyngeal sections, excluding the nasopharynx, is an essentially longitudinal tract or chamber with passage controlled at either end by two gates: the oral sphincter and the epiglottal sphincter, respectively associated with the lingual anchors of /p/ and of the /epiglottal stop/. see fig. 1.

This tract region, which is a framework or envelope of forces bounded by the two terminal gates, can be called the /p/-epiglottal stop

fig. 1

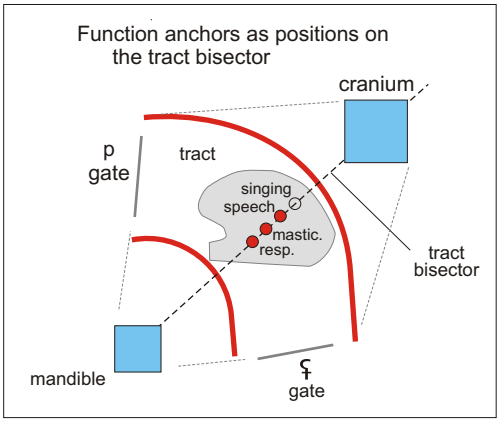


The tract bisector and function anchors

In a balanced state of the body and head and with nasal breathing, this longitudinal tract is bisected by a median line of force, passing through the tongue and medially connecting and holding the mandible up to the base of the cranium as shown in fig. 1.

This medial line is the tract bisector line of the p-epiglottal tract, and it is the axis on which the lingual function anchors are situated in the respiratory framework envelope. These anchors are (a) the first oral respiratory anchor, (b) the general mastication anchor, (c) the general speech anchor (GS-anchor, of hierarchical rank 1.0), and (d) the singing anchor. The selection of the function anchor is determined by several factors, including the level of force generated in the UV frame and the positioning of the jaw. See fig. 2. (For jaw behaviors see the *Ontogeny of phonemes*.)

fig. 2



Note: this tract bisector is the structural equivalent of the analogous lingual bisector (discussed elsewhere). Both develop from the same source, but arise in different frameworks: the tract bisector is formed in the preparatory speech mode while the lingual bisector appears in active speech.

The generation of the function anchors through mergers of the gate anchors of the /p/-epiglottal stop tract

It is possible to define the generation of these anchors as the mergers of the terminal anchors of the /p/-epiglottal stop tract. In a state of equipoise, starting at the lowest energy level, the anchors of /p/ and of the epiglottal stop can be merged at increasing levels of energy, moving along the bisector line, to produce, respectively, the anchors of the general anchors of the 1st oral respiration, mastication, speech (and singing). See fig. 3.

This spontaneously generated passage through function anchors can be observed. If one, set in a balanced state of minimal tension of the framework, gradually increases the tension applied to lingual anchor of nasal respiration and also allows other parts of the framework to spontaneously change that anchor will enter the process of transformations

Function anchors on lingual tract bisector

The lingual bisector passes through the merged anchor of the oral (anterior 2/3) and the pharyngeal (posterior 1/3) parts of the tongue. As with the tract bisector, the appropriate forms of the function anchors appear lined up on the lingual bisector, see figs. 4:

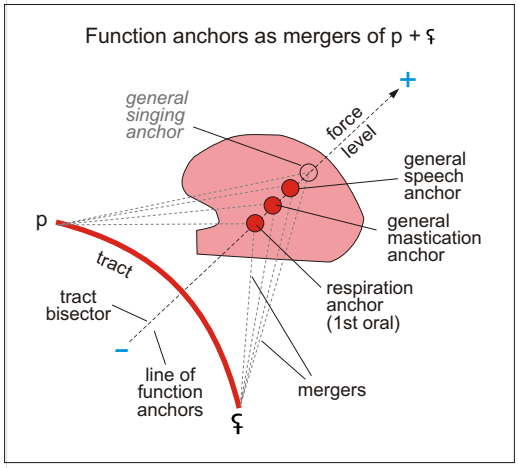
1. 1st oral speech respiration anchor
2. general speech respiration anchor
3. general sLg anchor
4. general singing anchor

Note: The oral respiration anchor transforms into that of speech respiration, which serves phonation, and which is behaviorally distinct from normal respiration.

The tract bisector and the lacunar space

The tract bisector also divides the lacunar gap, as well as the submandibular region see fig. 5.

fig. 3



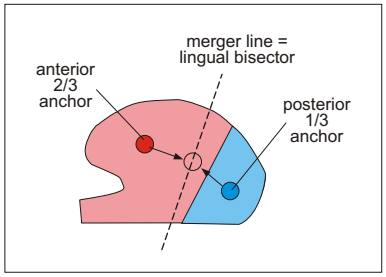


fig. 4

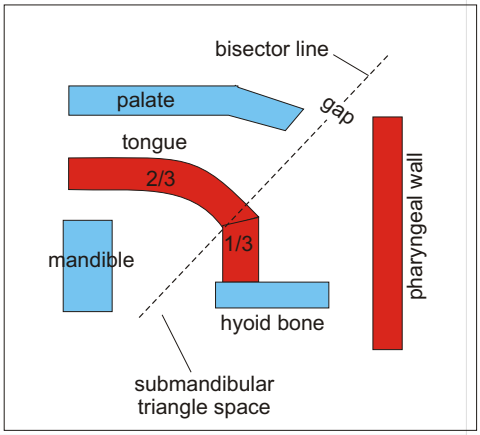


fig. 5