

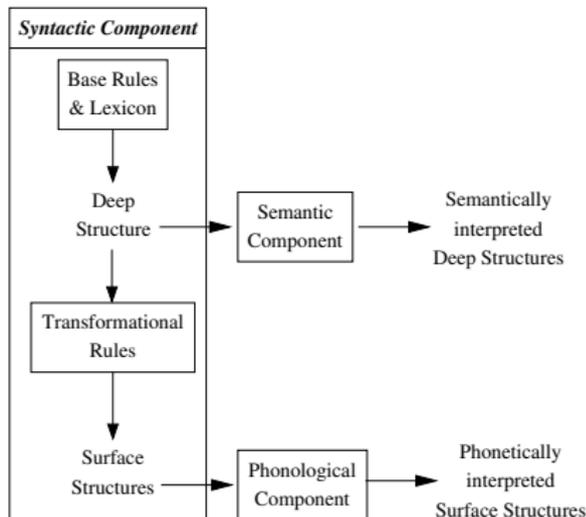
Phonological Theories

Distinctive Features – SPE and Feature Geometry

Session 3

Post-Jakobsonian Features (SPE)

CHOMSKY and HALLE (1968) derived the *phonological structure* from the *morphological structure*. Phonemes (as units in the observable surface form) were no longer required.



Post-Jakobsonian Features (cont.)

- The features were more dependent on the articulatory configuration, so more differentiated features were required (e.g. not rounded, pharyngealised and retroflex as [flat])
- All phonological features were strictly binary. (the distinction between underlying and surface forms allowed “phonetic features” to take on continuous values)
- Focus very much on inherent (segmental) features. Only stress was theoretically developed to any degree.

SPE Inherent Features

- Features defined along four dimensions (compared to the three by JFH):
 - Major class features
 - Cavity features
 - Manner features
 - Source features
- Apart from the first dimension, these reflect the articulatory, production perspective rather than the acoustic/perceptual.

Comparison of Inherent Features 1

	JAKOBSON and HALLE	CHOMSKY and HALLE	HALLE and STEVENS (changes)
I. <i>Major class features</i>			
±vocalic		±vocalic (±syllabic)	
±consonantal		±consonantal	
		±sonorant	
II. <i>Cavity features</i>			
compact/diffuse	}	{	added:
grave/acute			±labial
sharp/plain			
flat/plain			
			abolished:
		±anterior	±low for vowels
		±coronal	
		±high	
		±low	
		±back	
		±round	
		±distributed	added:
		±lateral	±pharynx constriction
nasal/oral		±nasal	
(tense/lax)		±covered	→ ±advanced tongue root

Comparison of Inherent Features 2

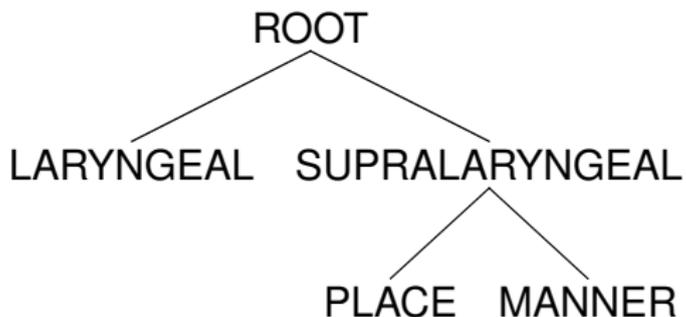
	JAKOBSON and HALLE	CHOMSKY and HALLE	HALLE and STEVENS (changes)
III. <i>Manner of articulation features</i>			
discontinuous/continuant (=abrupt/continuant)		±continuant	abolished:
tense/lax		±tense	±tense for vowels
(strident/mellow)		±instantaneous release	added: ±advanced tongue root
checked/unchecked		pressure suction	
IV. <i>Source features</i>			
strident/mellow		±strident	{ ±stiff vocal cords ±slack vocal cords ±spread glottis ±constricted glottis
voiced/voiceless		±voice	
(tense/lax)		±heightened subglottal pressure	
	(II)	±glottal constriction	

Unordered vs. ordered features

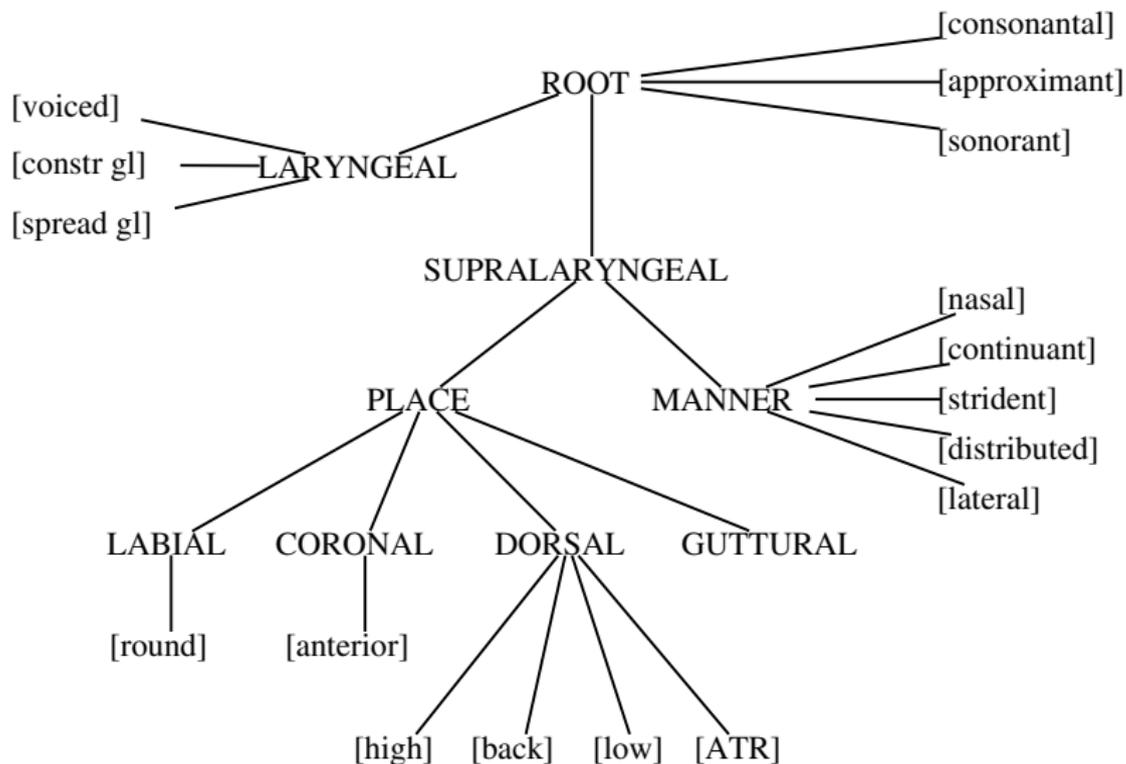
- The features (as presented so far) are subclassified according to function – *major class features* – or production properties – *cavity, manner* and *source features*. But there are *no dependencies* between the features.
- NICK CLEMENTS (1985) presented a grouping of features which took the link between features and their articulators into account:
This “ordered” view of features is known as *Feature Geometry*
- Some features are regarded as *independent* of a particular articulator (e.g. consonantal, sonorant, approximant)
- Other features are dependent on a specific *area* of the production system (e.g. voiced, vs. nasal)
- Other features are clearly dependent on a specific *articulator* (e.g. round, high, ATR)

Basic Geometry for Features

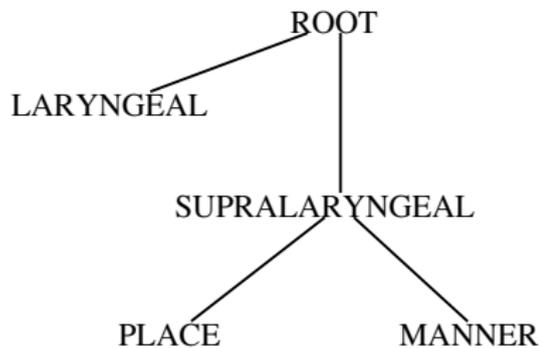
(after CLEMENTS 1985, cf. SPENCER pp. 155ff.)



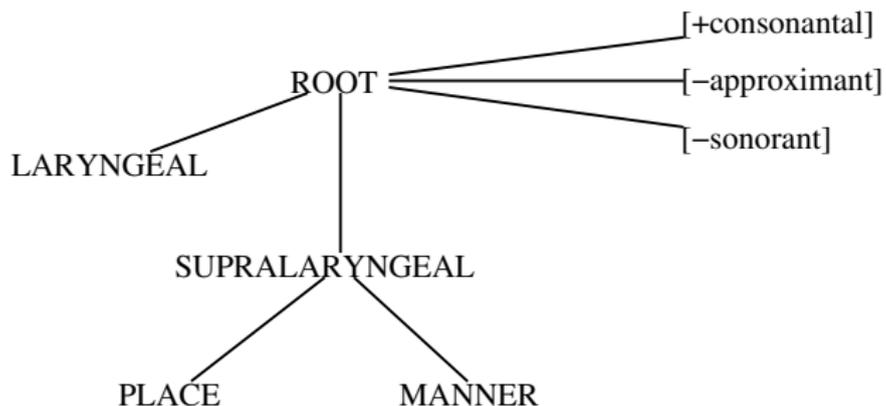
Feature Geometry (all)



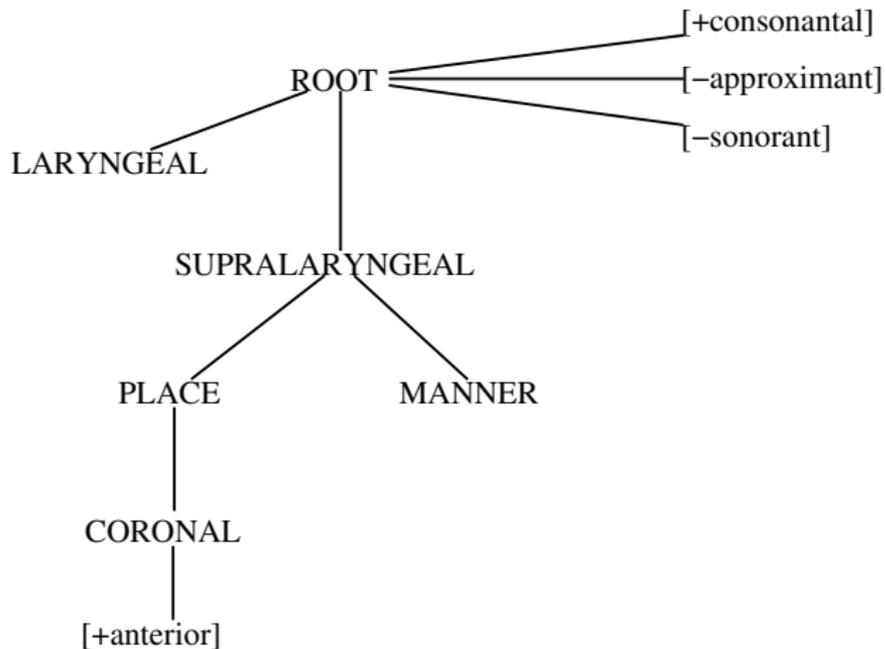
Example: Feature Geometry representation of /t/



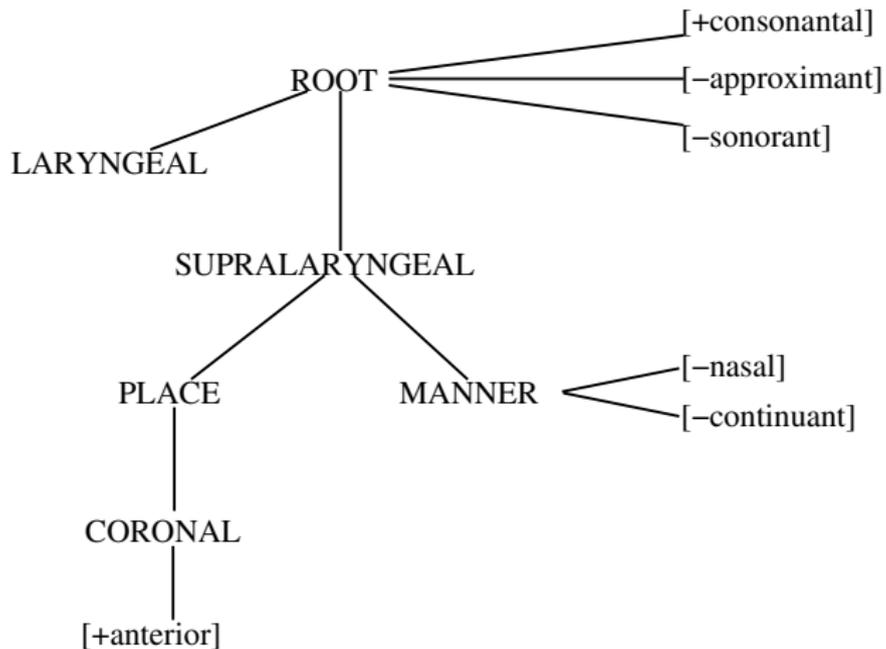
Example: Feature Geometry representation of /t/



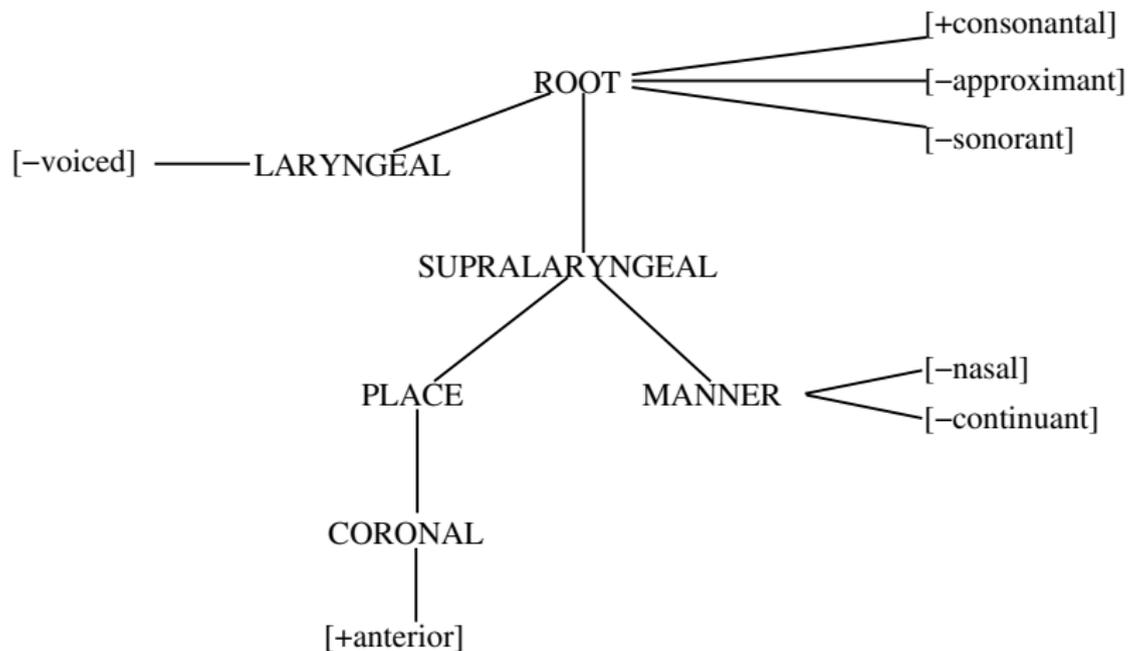
Example: Feature Geometry representation of /t/



Example: Feature Geometry representation of /t/

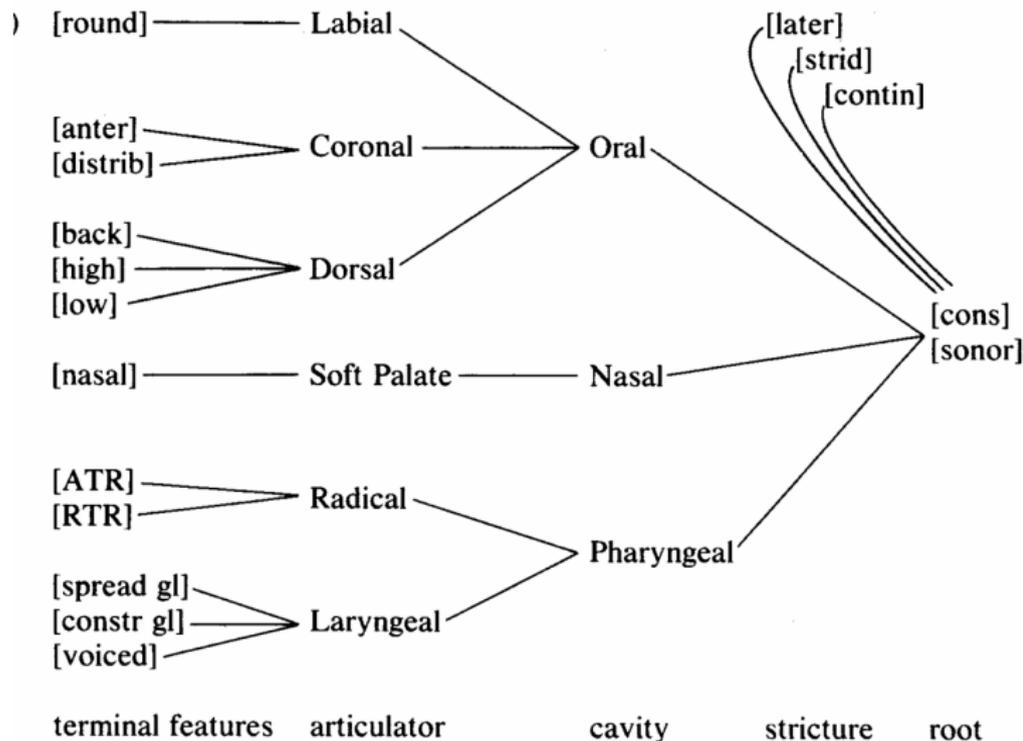


Example: Feature Geometry representation of /t/

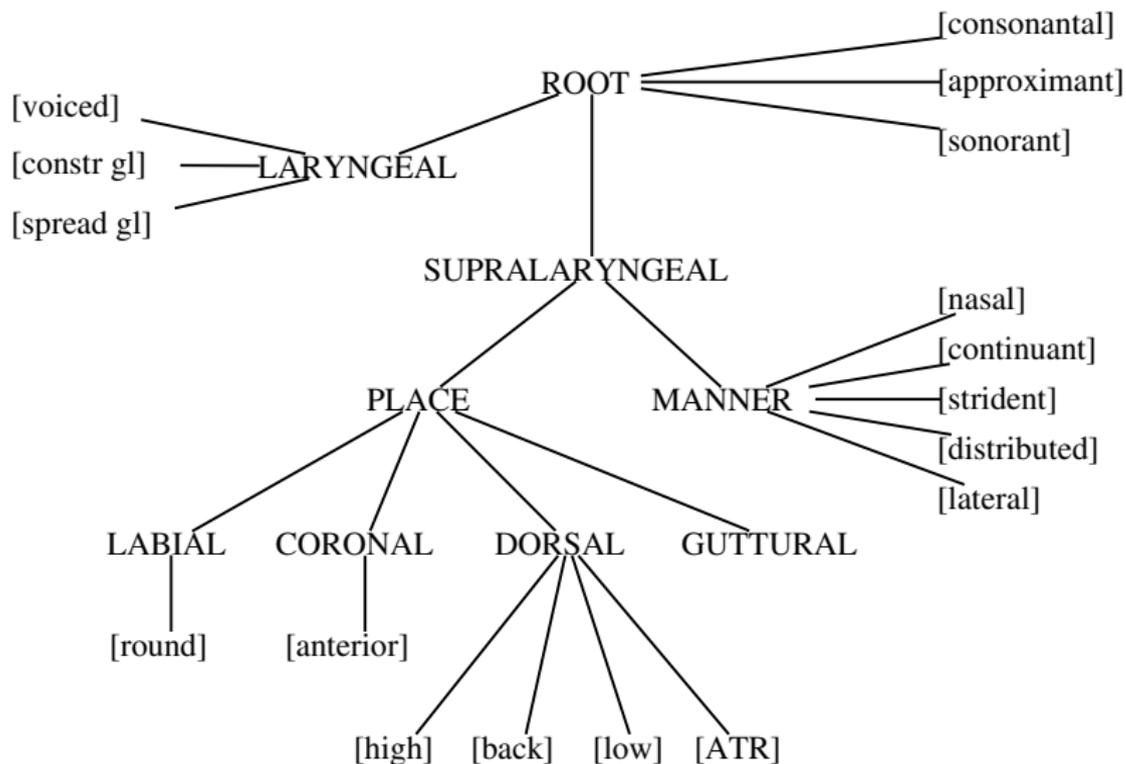


Alternative Feature Geometry scheme

(HALLE 1992)



Feature Geometry (all)



- 1 Specify a SPE and a JFH matrix for the word *Standlicht* /ʃtantliçt/ and compare.
Make notes of any problems, queries or objections you have!
- 2 Draw a series of feature-geometry trees for the same word (use the CLEMENTS arrangement).
- 3 Does the feature-geometry scheme by HALLE 1992 contain any theoretical or practical differences when compared to CLEMENTS/SPENCER?