

Reading guide: Hall (2007), "Segmental features"

This reading is useful for two reasons. Try to keep both in mind as you work through the chapter.

- *Specific goal:* To become familiar with the use of **phonological features** to describe segments, characterize natural classes, and describe phonological phenomena
- *General goal:* To understand that when we make choices about how to set up our phonological **model**, we are making different **predictions** about what kinds of patterns we should see in language—so we can compare and evaluate different formal models on the basis of the predictions that they make

A. Background and big-picture discussion questions

- The idea that phonological segments can be decomposed into a set of (binary) **features** was first explicitly developed by Jakobson, Fant, and Halle (1952) in *Preliminaries to Speech Analysis*, although this idea has origins in earlier work by European structuralists. Chomsky & Halle (1968), in *The Sound Pattern of English* (SPE), proposed a system of **binary** features that was widely used in generative phonology for many years and is the basis of many of the features included in Hall's discussion.
 - Post-SPE developments in feature theory include **feature geometry** and **privative** (unary, monovalent) features; Hall includes these in his discussion (see his citations for references).
 - Note that the "feature matrix" in Hall's ex (1) is an older model, and the "feature geometry" approach exemplified in Hall's ex (2) is a newer model
- (1) Hall asserts (p 312), "Features are psychological entities defined in terms of acoustic and/or articulatory realization which provide the link between cognitive representation of speech and its physical manifestation." Hall then goes on to present "two arguments for features". What are these two arguments? If these arguments are taken to the extreme, do they pose any difficulties for Hall's initial definition of features?
- (2) p 313: "It is usually assumed that if a feature is distinctive in a language then only the sounds for which it is distinctive are marked underlyingly for that feature."
- I would strongly dispute that this is "usually assumed"
 - To consider: What are the implications of such an assumption?

B. Hall's feature system

- For each distinctive feature proposed in the reading, think about:
 - how it is defined
 - its formal status: binary? privative?
 - **what natural classes it distinguishes** | this is key! this will help you *use* the features!
 - where Hall places the feature in his feature geometry
 - any controversies or typological inconsistencies concerning the feature

You may wish to take notes on the feature list below to make as a handy reference for working with phonological features in this course.

Major class features — inside ROOT node | (Note that Hall doesn't notate binary features with '±')

[±consonantal]

[±sonorant]

[±approximant]

Laryngeal features — under LARYNGEAL node

[±voice]

[±spread glottis]

[±constricted glottis]

Manner features — not a constituent

[±continuant]

[±nasal]

[±lateral]

[±strident]

Place features — under PLACE node

[LABIAL]

[±round]

[CORONAL]

[±anterior]

[±distributed]

[DORSAL]

[±back]

[±high]

[±low]

[PHARYNGEAL]

[±ATR]

C. Check your understanding and prepare for class discussion

I. Major class features (§13.3)

- (3) Here are some traditional descriptive terms for the natural classes that are defined by various combinations of the major class features: **consonant**, **obstruent**, **sonorant**, **liquid**, **nasal**. See if you can use the major class features to designate each class.
 - Another useful term is **vocoid**, which means any [–cons] segment, i.e., **vowel or glide**.
- (4) How is the contrast between **glides** and **high vowels** represented in Hall's model?
- (5) Note: It may well be the case that the values of [±cons], [±son] for **glottal segments** are best considered on a language-by-language basis.
- (6) If we set aside the somewhat controversial (or language-specific) claim that glottal segments are [–cons], we find that not all combinations of [±cons], [±son], and [±approx] are possible. Certain values of some of the major class features entail particular values for other major class features. Work out the possible combinations of these features, and state which natural class each feature combination specifies.
 - The natural classes that are defined by the major class features form a scale from *most to least vowel-like*; this scale is known as the **sonority scale** and it is important in phonology, especially with respect to syllable structure, stress, and tone.
 - Perhaps unsurprisingly, the position of glottal segments on the sonority scale is also controversial.

II. Laryngeal features (§13.4)

- (7) Hall defines [±voice] in a very articulation-based way. What might an acoustically based definition for [±voi] look like? How would each version of the definition classify the initial stop in an English word like *book* in phrase-initial position?
- (8) Hall's definition of [+constricted] makes a prediction that a wide variety of rather distinct segment types should behave as a natural class. Which segment types?
- (9) What is the motivation for grouping [±voi], [(±)spread], and [(±)constr] under LARYNGEAL?

III. Manner features (§13.5)

- (10) What questions or problems concerning liquids (laterals and rhotics) are raised in note 4?
- (11) What value of [±cont] do nasals like [n m] have?

IV. Place features (§13.6)

- (12) What value does [t^w] have for [±round] in Hall's model? How about [t]?
- (13) What are the options for representing palatal place of articulation?
- (14) Do vowels have place features?

V. Feature geometry (relevant info in §13.2 and §13.7)

- (15) Think of a classic case of nasal place assimilation, where any nasal takes on the place of articulation of any following stop.
- How can we take advantage of feature geometry to give this pattern a general analysis?
 - What would we have to do in an SPE-style model, where a segment is simply composed of an unordered, unstructured list of features?
- (16) Consider the following three rules. The first is common. The second is not a very plausible phonological rule. The third and fourth are also common.
- (i) Vowels become nasal when they follow a nasal.
 - (ii) Stops become labial when they follow a nasal.
 - (iii) Coronals become post-alveolar when they precede a high front vowel.
 - (iv) Stops become voiced when they follow a nasal.

Questions:

- (a) Can Hall's feature geometry make a distinction between (i) and (ii)? How?
- (b) Does the same approach help explain why (iii) and (iv) are also common rules?

Upshot: How much of phonological typology CAN OR SHOULD feature geometry attempt to explain?

VI. Some questions of representation (§13.6, §13.7)

- (17) What are the options discussed for representing affricates? What does Hall prefer?
- (18) What are the arguments for using a CORONAL feature for vowels instead of the DORSAL/LABIAL model that Hall promotes?