

## Notes on DISTINCTIVE FEATURES

1. **General assumption:** possibly the smallest number of features should be able to account for phonological generalizations (e.g. contrasts) in the world's languages. Consequently, features are binary, i.e. appear in two values: plus and minus.

Example:

There is no need to introduce the feature [ $\pm$ front], because [ $\pm$ back] is sufficient: [-back] vowels are front, [+back] vowels are back. Central vowels appear to create a problem, which we will discuss later.

2. Argument for features: it makes no sense to write separate Final Devoicing rules for each obstruent, such as

chleb 'bread':  $b \rightarrow p / \text{---} \#$

próg 'threshold':  $g \rightarrow k / \text{---} \#$

wóz 'cart':  $z \rightarrow s / \text{---} \#$

rów 'ditch':  $v \rightarrow f / \text{---} \#$

Rather we use features:  $[+\text{obstr}] \rightarrow [-\text{voiced}] / \text{---} \#$

3. Features (simplified)

[ $\pm$ nasal]

[+nas] the airflow goes through the nose (nasal consonants and nasal vowels are [+nas])

[ $\pm$ lateral]

[+later]: the airflow goes on the sides of the tongue (*l* sounds are [+later])

[ $\pm$ obstruent] or [ $\pm$ sonorant] (same thing, but the value is reversed):

Obstruents are pronounced with obstruction in the vocal tract: closure = total obstruction (stops) or narrowing = partial obstruction (fricative).

Obstruents: stops affricates and fricatives.

[ $\pm$ coron]

coronals are pronounced with the tip or the front part the tongue

[+coron]: interdental, dentals, alveolars, postalveolars, palatoalveolars

prepalatals (= alveolo-palatals). Other sounds are [-coron].

[ $\pm$ anterior]

labials, labiodentals, interdental, dentals, and alveolars are [+anter]. Other sounds are [-anter].

[ $\pm$ continuant]

[-cont] are sounds during the production of which the air flow over the tongue is

blocked for a moment.

[-cont]: stops, affricates, nasals and laterals.

[±strident], it is an acoustically defined feature; roughly [+strid] sounds are noisy sounds

[+strid]: all affricates and some fricatives – [f v s z š ž ʃ ʒ ʂ ʐ]

[-strid]: interdental and velar fricatives, stops, nasals liquids [l r], semivowels and Vowels

The other features for consonants are self-explanatory: [±voiced], [±cons], [±syllabic].

[±high]

[+high]: the tongue is raised from the neutral position (the position for schwa)

High vowels are [+high].

[±low]: the tongue is lowered from the neutral position (the position for schwa)

Low vowels are [+low].

Mid vowels are [-high,-low].

[±tense]: tense vowels are pronounced with tension of the tongue

[+tense]: upper high, upper mid, ‘backer’ low

[-tense]: lower high, lower mid, ‘fronter’ low; [-tense] vowels are also called lax vowels.

[±round]: vowels pronounced with lip rounding are [+round]

[±back]

Problem: where is the cutoff between [-back] vowels and [+back] vowels.

The question is relevant for central vowels, for example, Polish [a] and [ɨ]: are they [-back] or [+back]?

Answer: they are [+back] because they function phonologically with back vowels.

The test here is Palatalization. Back vowels and central vowels do not cause Palatalization.

“function together” is the same as “behave the same phonologically”: segments that either undergo rules together or constitute a context for rules, e.g. obstruents in Final Devoicing.

Segments that behave phonologically in the same way constitute a natural class.

Exercise:

Define stops as a natural class = group stops together to the exclusion of all the other underlying segments in a given language:

(1) [+obstr] excludes all vowels, semivowels, nasals, and liquids (= *r* and *l*). Still need to excluded: fricatives and affricates

(2) [-contin] excludes fricatives

(3) [-strid] excludes affricates

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Final answer: [+obstr,-contin,-strid]