24.961 Features-1

[1]. requirements for a feature system

- express contrasts: if a pair of sounds [x] and [y] distinguish lexical items then there must be a feature F such that [x] and [y] have distinct values for [F].
- classificatory function (encode the vocabulary); categorial in nature
- indicate principal articulatory and acoustic correlates (For PSA acoustics primary, for SPE articulation is);

  [labial] ([flat]) is realized by lip protrusion in vowels and by lip constriction in consonants; distinct gestures that have similar acoustic effect: lower F2 (by lengthening cavity for vowels and longest front cavity in consonants);
  dental stops and high front vowels have similar acoustic structure: this explains the ubiquitous fronting of [u] after dentals (cf. Clements & Hume: front vowels as coronal)
- express natural classes of sounds that figure in phonological rules and constraints
- tension between first and third requirements: release never contrastive but may be crucial for various rules and constraints;
- Binary vs. n-ary: e.g. vowel height, tone
- Binary vs. privative: [nasal] or [±nasal]; [voice] or [±voice]
- Abstracts away from internal temporal structure: affricates, prenasalized stops

[2]. feature geometry

- Some features are refinements of others rather than freely combining: e.g. [±distributed] is a dependent of coronal; [strident] is a dependent of consonants
- Recurrent feature groupings in assimilation processes:

  spread place features of [high], [low], [back] but not nasality or tone: e.g.
  Mawu loans from French: brosse > [bɔlɔsi ], France [falɔzì];


- Articulator model of Halle: any sound implemented by one of six major articulators; the articulators operate in one of three cavities; the shape of the constriction represented by root node features of [±cons, ±sonorant] and stricture features; each articulator implements certain terminal features:
- Segment is represented as some path through the tree;
- Key notion: dependency; order makes no difference
- Assimilation: complete vs. partial; single vs. multiple; feature-filling if underspecified; feature changing otherwise
- Examples:
assimilation for voice: plural bed-S, bet-S; RISD, NASDAQ, NASCAR, Frisbee, PATCO, Oslo, Tasmania

Biblical Hebrew [n] assimilation:

```
ka:ta:b     na:pal     na:tan      na:gaʃ
yi-ktob     yi-ppol    yi-tten     yi-ggaʃ
'write'     'fall'     'give'      'approach'
```

article: melek    hammelek    'king'
9i:r           ha:9i:r    'city'

Partial:

Mahou: brosse > [bɔlɔsi], France [fɔlɔzi]

Mari: [round] and [back] but not [high], [low]

English coronal plosives:

```
[t]  [d]  [n]
__0  eighth hundredth tenth  [+distrib, +anter]
__ʃ  eight shoes red gems insure  [+distrib, -anter]
__r  tree dream enroll  [-distrib, -anter]
__s  hats reads ensue  [-distrib, +anter]
```

Ancient Greek

```
p,t,k  [-voice, -spread gl]
pʰ, tʰ, kʰ  [-voice, +spread gl]
b,d,g  [+voice, -spread gl]
```

```
tri:b-o:  tetri:p-tai  'rub'
grapʰ-o:  gegrap-tai  'write'
pemp-o:  epempʰ-tʰ:e:n  'send'
tri:b-o:  etri:pʰ-tʰ:e:n  'rub'
klept-o:  kleb-de:n  'steal'
grapʰ-o:  grab-de:n  'write'
```

- Reduction:

debuccalization:

Spanish dialects: me[h], mes-e[h] ‘month’
Muher (Gurage-Rose 2000)

Perfect    imperfect    jussive    imperative
ləkkəm     yə łə?mu     yəlkəm     li?im

“bleaching”: Ge’ez: /i,u,e,o,a,ɔ,i/ the peripheral vowels derive from earlier long vowels while the central [i] and [ɔ] derive from [u,i] and [a] respectively.

Romanian: *kw > p cf. Latin: aqua, R. apă ‘water’

Feature tiers and underspecification:

Japanese rendaku and Lyman’s Law (Ito & Mester 1986)

iro ‘color’, kamí ‘paper’, iro-gami ‘colored paper’
ike hana (*pana) ‘flower’, ike-bana ‘flower arrangement’


kámi+kaze -> kami-kaze, *kami-gaze ‘divine wind’
onna+kotoba -> onna-kotoba, *onna-gotoba ‘woman’s speech’