

Ling 105
Sounds of Language

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Kevin Ryan

Setswana [d, l]

- Are [d] and [l] allophones of the same phoneme?
- Determine whether they're in complementary (non-overlapping) distribution

lefifi	“darkness”	loleme	“tongue”
selepe	“axe”	molomo	“mouth”
xobala	“to read”	m:adi	“reader”
lerumo	“spear”	xopala	“to marry”
loxadima	“lightning flash”	hudi	“wild duck”
dumela	“greetings”	fe:di	“sweeper”
lokwalo	“letter”	k ^h udu	“tortoise”
mosadi	“woman”	podu	“goat”
badisa	“the herd”		

Setswana [d, l]

- First, check for any obvious conditioning factor (e.g. word-initial vs. not, intervocalic vs. not)
- If nothing jumps out, list the contexts for each phone
 - ① __d a, #, e:, o, u
 - ② __l #, e, a, ε, o
 - ③ d__ i, u
 - ④ l__ e, ε, a, o, ɔ
- Does __d overlap with __l?
- Does d__ overlap with l__?
- If complementarity is found, choose the non-default allophone and write a rule for it (generalizing over classes where possible)

Natural classes

- Phonological rules operate on natural classes
- **Natural class:** exhaustive set of phones characterized by a feature or conjunction of features
- **Feature:** for our purposes, any standard phonetic descriptor or its negation, e.g. *voiced*, *voiceless*, *coronal*
- Some natural classes of English:
 - ① /i, ɪ, u, ʊ/
 - ② /ʃ, ʒ, tʃ, dʒ/
 - ③ /m, w/
 - ④ /ɪ, ɛ/
- Some non-natural classes of English
 - ① /p, g/
 - ② /p, b, m, t, d/
 - ③ /f, tʃ/
 - ④ /u, i, ɛ/

Rule schema

- $X \rightarrow Y / A_B$
- X is the **target**
- Y the **structural change**
- A_B the **context** (omit if across-the-board)
- X, Y, A, and B are all normally natural classes (or special symbols like #)

Some useful symbols

- # for word boundary
- $[_\sigma]$ beginning of syllable
- $]_\sigma$ end of syllable
- \emptyset for null
 - **Deletion**: $X \rightarrow \emptyset / A_B$
 - **Epenthesis**: $\emptyset \rightarrow Y / A_B$
- E.g. Old Tamil: [i] is inserted before a word-initial liquid

Parsimony

- Express rules as simply as possible
- Avoid redundant features, e.g.
 - ① “Voiced sonorants” (in a language in which sonorants are always voiced)
 - ② “Voiced obstruents → voiceless” (“voiced” is unnecessary here)
- Generalize as much as the provided data permit
 - Fewest features = greatest generalization
 - If you see /b, d, g/ as targets, but can’t tell whether /ʒ/ (also in the inventory) is also one, assume that it is
- In writing up answers, it’s OK initially to list out segments (e.g. “targets are /p, t, k/”), but if more than one segment is involved, you should also generalize over the list (here, “voiceless stops”)

Assimilation

- Most common type of rule
- Segment acquires feature(s) from neighbor
- **Progressive** (a.k.a. **perseveratory** or **lag**): conditioner precedes target (feature spreads rightwards)
- **Regressive** (a.k.a. **anticipatory**): conditioner follows target (feature spreads leftwards)
- Regressive is more common

Assimilation

- English Latinate “not” prefix: Rule? UR of prefix?

i[m]-balance

i[n]-tolerant

i[ŋ]-capable

i[m]-possible

i[n]-opportune

i[n]-appropriate

i[n]-dependent

i[ŋ]-congruous

Greek variables

- To express an assimilation rule formally, use variables (Greek letters starting with α), e.g.
 - “A nasal takes on the place of articulation of a following obstruent”
 - $\text{nasal} \rightarrow \alpha\text{place} / _ \alpha\text{place obstruent}$
- Variables coindex two parts of a rule
- Use with features (e.g. αvoice) or cover terms such as “place” or “feat” (all features)

Assimilation

- Dutch compounds

strop + das	→	stro[bd]as	“tie”
wit + boek	→	wi[db]oek	“white book”
kas + boek	→	ka[zb]oek	“cash book”
bloed + koraal	→	bloe[tk]oraal	“blood coral”
huid + plooi	→	hui[tp]looi	“skin crease”
slob + kous	→	slo[pk]ous	“gaiter”

Assimilation

- Bole ventive suffix (stipulate to be UR /-ik/)
- As seen immediately after the root in:
 - ᵐgòr-ís-sù:-jí “that he tie them and bring them”
 - ᵐgòr-ít-tà:-jí “that he tie her and bring her”
 - ᵐgòr-ík-kà:-jí “that he tie him and bring him”
 - ᵐgòr-ín-nà:-jí “that he tie me and bring me”

Assimilation

- Classical Arabic *ḥurūf qamariyyah* (“moon letters”) vs. *ḥurūf šamsiyyah* (“sun letters”)

ʔal-qamr	“the moon”	ʔaḷ-ḷams	“the sun”
ʔal-faras	“the mare”	ʔad-daṛ	“the house”
ʔal-kitaḇ	“the book”	ʔaz-zajt	“the oil”
ʔal-ḥarb	“the war”	ʔan-nahr	“the river”
ʔal-ʔab	“the father”	ʔaθ-θawb	“the garment”

Assimilation: vowel harmony

- Feature spreading across vowels (consonants often invisible)
- Subscripts & superscripts, e.g. C_0
- Turkish

altfal-ur	“lowers”
gønder-ir	“sends”
sypyr-yr	“sweeps”
gelif-ir	“develops”
tʃalɯf-ur	“works”
otur-ur	“sits”