

# Word relations

- A fundamental insight of morphology is that words with related forms tend (in a systematic way) to have related meanings. Thus,
  - Word forms like walk and walks are related by virtue of the lexeme WALK:  $V \Leftrightarrow V\text{-s}$
  - Word forms like walking and running are related via the suffix -ing:  $V\text{-ing}$
  - Word forms like **houses** and **moose** inhabit the same slot (plural) of different paradigms

Sing	Pl
house	houses
moose	moose

# Relations among forms: Exponence

- Morphological exponent: any formal characteristic that ‘realizes’, ‘marks’, ‘signals’ or ‘spells out’ one or more morphosyntactic properties.
- Root: stem of a simplex word

*frag-* is the root of the German verb **FRAGEN** ‘ask’, underlying finite forms such as *fragst* ‘ask.2SG’, nonfinite forms such as *fragen* ‘to ask’ and even derived adjectives such as *fraglich* ‘dubious’.

- Stem: the form of a word that is obtained by removing its inflectional/derivational formatives/exponents and which serves as the basis for morphological operations, i.e., an uninflected/underived form of a LEXEME.

*fragte-* is the stem of the German preterite paradigm, which consists of the forms *frage* ‘1SG’, *fragtest* ‘2SG’, *fragte* ‘3SG’, *fragten* ‘1PL’, *fragtet* ‘2PL’ and *fragten* ‘3PL’.

# Relations among forms: Segmental

- Segmental: a property is realized by an affixal formative
- Affixal formatives:
  - Prefixes: forms before the root/stem  
  
un- is a prefix in un-talkative
  - Suffixes: forms after the root/stem  
  
-ative is a suffix in untalk-ative
  - infixes: forms inside the root/stem

# Relations among forms: Segmental

- Infixes:

In Tagalog, *um* is prefixed to vowel-initial verb roots but infixes after the initial consonant of consonant-initial roots (Aspillera 1981: 45-46): *alís* ~ *umalís* 'to leave' vs *bása* ~ *bumása* 'to read'.

In Ulwa: insert *-ka-* after stressed syllable, effectively creating an infix in certain situations.

<i>bás</i>	'hair'	<i>bás-ka</i>	'his hair'
<i>ásna</i>	'clothes'	<i>ás-ka-na</i>	'his clothes'
<i>arákbus</i>	'gun'	<i>arák-ka-bus</i>	'his gun'

# Relations among forms: Segmental

- Circumfixation
  - Dutch fiets-en ‘to bicycle’ ~ ge-fiets-t ‘bicycled’
  - German sing-en ‘to sing’ ~ ge-sing-e ‘singing’
  - In Chukchee privative case, i.e. without something, by suffixing -ka to vowel-initial stems, but circumfixing e- and -ke to consonant initial stems)

ococ ‘leader’ ~ ococ-ka ‘leaderless’

titi ‘needle’ ~ e-titi-ke ‘needleless’

- Theoretical status of circumfixes is matter of some debate
- Suffix > prefix > infix > circumfix (?)

# Homework 1: Problem 1

Subject (singular)			
Object	1	2	3
Sg. 1		əntxlaxkmiŋ	əntxlaxkommen
2	təntxlaxkin		əntxlaxkin
3	təntxlaxkicen	əntxlacgin	əntxlaciŋnen
Pl. 1		əntxlaxkmiʔŋ	əntxlaxkomnaeʔn
2	təntxlaxkisxen		əntxlaxkisxen
3	təntxlaxkiceʔn	əntxlacgiʔn	əntxlaciŋneʔn
Subject (plural)			
Sg. 1		əntxlaxkmiŋsx	nəntxlaxkommen
2	nəntxlaxkin		nəntxlaxkin
3	nəntxlaxkicen	əntxlasik	nəntxlaxlagenen
Pl. 1		əntxlaxkmiʔŋsx	əntxlaxkomneʔn
2	nəntxlaxkisxen		nəntxlaxkisxen
3	nəntxlaxkiceʔn	əntxlaxkiʔn	nəntxlaxlageneʔn

## Homework 1: Problem 2 (partial)

2. Consider the following data:  $\acute{n}$  = palatal nasal; Nom = Nominative, Gen = Genitive; Dat = Dative 'to'; Abl = Ablative 'from'; Iness = Inessive 'inside'; El = Elative 'from inside'; Ill = Illative 'to inside'.

	horse		horses
Nom.	alaša		alašat
Gen.		alaša $\acute{n}$	
Dat.		alašandi	
Abl.		alašada	
Iness.		alašasa	
El.		alašasta	
Ill.		alašas	

# Patterns of Exponence: Segmental

- Affixation with phonology of affix derived from stem

## Classical Tibetan

thibpo	‘dense’	thibthib	‘very dark’
n̄khyogpo	‘crooked’	n̄khyogn̄khyog	‘torturous’
n̄therpo	‘glossy’	n̄thern̄ther	‘polished’
zimbu	‘thin’	zimzim	‘fine as hair’

## Classical Tibetan

n̄kholba	‘insensible’	khalkhol	‘stunned’
glenpa	‘stupid’	glanglen	‘very stupid’
ŋanpa	‘bad’	ŋanŋon	‘miserable’
rdzub	‘deceit’	rdzabrdzub	‘imposture’
sŋo	‘plant’	sŋasŋo	‘vegetables’



# Patterns of Exponence: Segmental

- Copying into a prosodically defined template
- Ilokano

kaldín	‘goat’	kal-kaldín	‘goats’
púsa	‘cat’	pus-púsa	‘cats’
kláse	‘class’	klas-kláse	‘classes’
jyánitor	‘janitor’	jyan-jyánitor	‘janitors’
róʔot	‘litter’	ro:-róʔot	‘litter (pl.)’
trák	‘truck’	tra:-trák	‘trucks’

# Patterns of Exponence: Segmental

- Copying into a prosodically defined template

Reduplicative infixes in Samoan verbal marking:

Singular	Plural	Gloss
alofa	alolofa	'love'
galue	galulue	'work'
nofo	nonofo	'sit'
`ai	`a`ai	'eat'

# Patterns of Exponence: Segmental

- Subtractive marking

Lardil

yiliyil ‘oyster.NOM’ ~ yiliyili-n ‘oyster-ACC’

Dyirbal

Root

Imperative

Gloss

banij

bani

‘come!’

balgal

balga

‘hit!’

# Patterns of Exponence: Segmental

- **Exchange:** A morphological contrast is encoded by an opposition between segments in which a given segment may signal either value of the opposition.

Spanish: indicative versus subjunctive mood marked by a process of a ~ e 'vowel reversal':

compra `buy.3SG.INDIC. ~ compre `buy. 3SG.SUBJUNC.

come `eat. 3SG.INDIC. ~coma `eat. 3SG.INDIC.

# Patterns of Exponence

- Synthetic vs. analytic (or periphrastic) forms

Western Mari kol- 'die'

		FIRST-PAST		SECOND-PAST	
		AFFIRMATIVE	NEGATIVE	AFFIRMATIVE	NEGATIVE
SG	1	<i>kolô-š-âm</i>	<i>š-əm kolô</i>	<i>kol-en-äm</i>	<i>kolô-ðe-l-am</i>
	2	<i>kolô-š-êc</i>	<i>š-əc kolô</i>	<i>kol-en-ät</i>	<i>kolô-ðe-l-at</i>
	3	<i>kolô-š</i>	<i>əš kolô</i>	<i>kol-en</i>	<i>kolô-ðe</i>
PL	1	<i>kolô-š-na</i>	<i>šə-nä kolô</i>	<i>kol-en-nä</i>	<i>kolô-ðe-l-na</i>
	2	<i>kolô-š-ta</i>	<i>šə-ðä kolô</i>	<i>kol-en-dä</i>	<i>kolô-ðe-l-ða</i>
	3	<i>kol-eβ-ə</i>	<i>əš koləp</i>	<i>kol-en-ət</i>	<i>kolô-ðe-l-ət</i>

# Patterns of Exponence: Suprasegmental

- Suprasegmental (also ‘internal modification’): A property is realized by a stress a pattern, a tonal melody, a length contrast...
- Consonant or vowel gradation:

Estonian genitive and partitive singular nouns often differ only in the length of the initial syllable (Mürk 1997; Blevins 2005): Genitive singular contains a long syllable, while the partitive singular contains an “overlong” syllable

lu:ku `lock.GEN      ⇔    lu::ku `lock.PART

ko:li `school.GEN    ⇔    ko::li `school.PART

# Patterns of Exponence: Suprasegmental

- Templatic consonant and vowel patterns:

In Arabic, inflected verb forms consist of a consonant pattern (triliteral root, i.e. three letters) associated with the basic LEXEME and a vowel pattern interleaved among the consonants.

Consider **ktb** `write' & **drs** `study':

katab	`he wrote'	daras	`he studied'
jiktab	`he will write'	jidras	`he will study'
maktuub	`(has) written'	madruus	`(has) studied'
maktaba	`bookshop'	madrasa	`school'

# Patterns of Exponence: Suprasegmental

- Tone: Segments or words can be associated with different pitches and these differences are systematically associated with specific meanings.

DhoLuo 'taste soup' (! = downstep, é = high tone è = low tone)

	Imperfective	Perfective
1sg	á ! b́íló kàdò	à b́íló kàdò
2sg	í ! b́íló kàdò	ì b́íló kàdò
3sg	ó ! b́íló kàdò	ò b́íló kàdò
1pl	wá ! b́íló kàdò	wà b́íló kàdò
2pl	ú ! b́íló kàdò	ù b́íló kàdò
3pl	gí ! b́íló kàdò	gì b́íló kàdò



# Patterns of Exponence: Suprasegmental

- English: récord v. recórd
- Russian (okno ‘window’, mesto ‘place’)

Case	Sing	Pl	Sing	Pl
NOM	oknó	ókna	mésto	mestá
ACC	oknó	ókna	mésto	mestá
GEN	okná	ókon	mésta	mest
DAT	okné	óknam	méste	mestám
INST	oknó	óknami	méstom	mestámi
LOC	okné	óknax	méste	méstax

# Patterns of Exponence: Suprasegmental (internal modification)

- Ablaut (apophony): a pattern of vowel alternation internal to stem

In German (as in English), present, preterite and participial forms of strong verbs exhibit residual patterns of vowel ablaut:

singe 'sing.ISG.PRES' ~ sang 'ISG.PAST' ~ gesungen  
'PART'.

# Patterns of exponence

- Extended exponence: The expression of a single property by multiple formatives.

Tsova-Tush Nakh-Dagestanian (also called North East Caucasian from Harris ms.)

tiš<sup>n</sup> c'a                      daḥ d-ox-d-o-d-an-iš=ešŭ  
old house(d/d).ABS    PV CM-destroy-CM.TR-PRES-CM- EVIDI-2PL.ERG = 2PL.ERG  
'Y'all are evidently tearing down the old house.'

# Patterns of Exponence

- Truncation
  - Hypochoristics (Robert ~ Rob)
  - Clipping (specification ~ spec)
  - Latinate agent nominals (Russian, Dutch)

biologija 'biology' ~ biolog 'biologist'

agronomija 'agronomy' ~ agronom 'agronomist'

# Classic typological distinctions

- **Agglutination:** Each property is expressed by a single form and a single form expresses a single property: a bi-unique relation between forms and meanings.

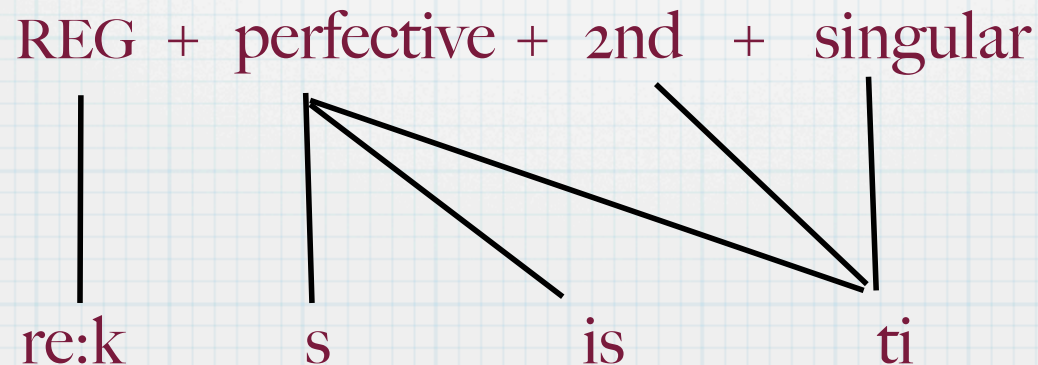
Finnish: talo-i-ssa-mme  
house-PL-IN-IPL.POSS  
'in our houses'

# Classic typological distinctions

- **Fusional:** The simultaneous expression of more than one grammatical property by a single formative (portmanteau morphs).

Russian: komnat-u  
room-ACC.SG

Greek: re:ksisti: `you (sg) ruled`



Paamese: (Paama,  
Vanuatu)

<b>Present/past Singular</b>		<b>Dual</b>	<b>Paucal</b>	<b>Plural</b>
1 naloh	<i>Inclusive</i> <i>Exclusive</i>	loloh ma:luloh	toloh matuloh	roloh maloh
2 koloh		mululoh	mutuloh	muloh
3 loh		luloh	teluloh	aloh
<b>Immediate future Singular</b>		<b>Dual</b>	<b>Paucal</b>	<b>Plural</b>
1 maloh	<i>Inclusive</i> <i>Exclusive</i>	lovaloh maluvaloh	tcvaloh matuvaloh	rovaloh mavaloh
2 kovaloh		muluvaloh	mutuvaloh	muvaloh
3 valoh		luvaloh	teluvaloh	avaloh

<b>Singular</b>		<b>Dual</b>	<b>Paucal</b>	<b>Plural</b>
1 na-	<i>Inclusive</i> <i>Exclusive</i>	lo- malu-	to- matu-	ro- ma-
2 ko-		mulu-	mutu-	mu-
3 Ø-		lu-	telu-	a-

# Classic typological distinctions

- Isolating: Single properties are expressed by strings of independent words, rather than by stems and formatives cohering into a single word-sized unit:

Vietnamese: **nhà khoa học** `scholar', where **nhà** means `person' (an agentive marker), **khoa học** is a compound consisting of subject + teacher. (Spencer 1991:313)



# Doing morphology

## Dataset 92. Sierra Popoluca (Mexico)

1. pet	'He swept.'
2. mij	'He came.'
3. wi?k	'He ate.'
4. nɔk	'He went.'
5. hoks	'He hoed.'
6. mijne?	'He has come.'
7. wi?kne?	'He has eaten.'
8. hoksne?	'He has hoed.'
9. pedo?y	'He swept here and there.'
10. hokso?y	'He hoed here and there.'
11. petpetne?	'He kept sweeping over and over.'
12. wi?kwikne?	'He kept eating over and over.'
13. nɔknɔkne?	'He kept going over and over.'
14. hokshoksne?	'He kept hoeing over and over.'
15. petpedo?y	'He kept sweeping here and there.'
16. hokshokso?y	'He kept hoeing here and there.'

# Classic typological distinctions

- Polysynthetic: Multiple properties are packed into a single word, some of it fusional, some not, but all of it generally equivalent to a whole sentence in many languages:

saimurtausuunguvuq

saimuq-jau-suuq-u-vuq

shake.hands-PASS-HAB-be-IND.3SG

`s/he is habitually shaken hands with (by people)' (Allen 1996:59)