Basic concepts: words and morphemes

LING 481
Winter 2011
Organization

• Word
  – diagnostics
  – different senses
• Morpheme types
• Allomorphy
  – exercises
What is a word?

• (Much more on difficulties identifying words in ch. 9, “Words and phrases”, particularly problems with orthographies)
Some possible diagnostics for “word”

• Syntactic
  – Words as “smallest unit of syntax”?  
    • You bought a cheeseboard.
    • You bought a cheese.
  – But is –s in cough-s a syntactic unit?
  – “Words can stand alone”  
    • when are you coming? tomorrow
    • but whose is this? hers./*her
More possible diagnostics for “word”

• Phonological
  – domain of stress assignment
    • French: final syll of word
    • Polish: initial syll
    • Modern Standard Arabic: one of final 3 sylls
  – (phonological domain: delimits scope of some phonological rule or constraint)
  – problem: clitics, “grammatical words that are unable to stand on their own phonologically but instead lean on an adjacent word” (ch. 9)
    • sometimes affect stress placement
      – Classical Greek stress must fall on one of 3 word-final syllables
      – o ánthropos ‘the person’
      – o ánthropòs mas ‘our person’
Stress and English compounds

• Most(?) compounds have initial stress
  – fastlane
  – hotdog
  – Coldfoot (AK)
  – carrot cake

• But
  – Cold Lake (AB)
  – chocolate cake
  – chicken salad
  – ginger ale
Other possible diagnostics for words

- Fixed order of elements in words
  - *unbreakable, *breakableun, *unablebreak
  - Change in morpheme order → ungrammaticality
- Mutable order of elements in sentences
  - *I order what I eat.*
  - *I eat what I order.*
  - Change in sentence order, change in semantics (English)
Non-separability and integrity

– Syntactic processes can’t apply to pieces of words
  • “Movement”
    – *I bought cheese. What did you buy ___?
    – *I bought a cheeseboard. *What did you buy a ___ board?

– Adj and adv modification
  • a stinky cheese
  • a stinky cheeseboard (what does stinky modify? cf. a stinky cheese board)

– Morphological processes don’t apply to parts of words
  • *hotdog, *hotter dog, *very hotdog (cf. very hot dog)
  • doghouse, doghouses (*dogshouse)
  • cf. mother-in-law, mother-in-laws/mothers-in-law
Phonological words vs. morphological words

- “Phonological word” or “Prosodic word”
- PrWd as phonological domain
- e.g. Korean syllabification ([V.CV])
  - Suffixed roots: one Prosodic Word
    - [kipʰ-i] 'deep'-Nom: 'depth'
    - [ki.pʰi]_{PrWd}
  - Compound: Two Prosodic Words
    - [apʰ-apʰ-i] 'front'-front'-Adv: 'to each person’
    - [ap]_{PrWd} [a.pʰi]_{PrWd} \rightarrow [a.ba.phi]
  - Prefixed root: Two Prosodic Words
    - [hotʰ-ipul] 'single'-'comforter‘: 'unlined comforter‘
    - [hot]_{PrWd} [ipul]_{PrWd} \rightarrow [ho.di.bul]
“Word”

- 2 different kinds of words as defined by Haspelmath and Sims
  - dictionary word ("lexeme")
  - text word ("word form")
Lexemes

• Abstract entity in speakers’ mental lexicons
• Word families = sets of related lexemes
  – live, liveable, liveability
• “derivation”: the relationship between lexemes of a word family
  – creation of one lexeme from another, e.g. LOGIC, LOGICIAN
  – compounding
    • a special type of derivation because it involves creation of one lexeme from 2 or more lexemes
    • all human languages (even isolating) seem to have compounding
Lexemes

• “derived lexemes” (“derivatives”) have their own “dictionary entry”
• why listed? often have unpredictable aspects
  – of phonol shape: *logicist: someone coined logician and it became popular
  – of semantics: different sentences of reader
    • ‘someone who reads’
    • ‘reading primer’
    • ‘grader’ (British English)
A Sahaptin lexical entry

wána (n) river. — Iwats’úlaksha wánapa. He’s fishing in the river.

Neh’i Wána (pn) Columbia R. (lit. “big river”)

wána- (v) flow. (hab wána, past wánana) — Áwanasha tilíwal núshnuñnik. He has a nose bleed. (lit. “Blood is flowing from his nose.”)

wanatpamá (n) river bed. (lit. “for flowing”) — Iláxyawi wána ku wanatpamásim itkáwa. The river dried up and only the river bed remains.

shapáwana- (v) drain. (lit. “cause to flow”) (“to milk” sha-pa-wa-na-sha Pandosy) — Ishapáwanasha tilíwal anakwnák wáxpushin páchanpa. He’s draining the blood out from where the rattlesnake bit him.

shapawanatpamá (n) ditch (of water); milk cow. (”milk cow” AS/BR 18)

shapawanánúu- (v) irrigate, water. — Ishapawanánúusha tamaniksh. He’s watering the garden.

Wañálá (n) Sahaptin person from Celilo, Goldendale and neighboring area. (post-contact name for people who refused to move to the Reservations, continuing to live on the Columbia R., Boyd 1996)

Wánapam (n) Sahaptin people from Priest Rapids area. (“The Wanapam lived on the Columbia River from above present-day Pasco to the head of Priest Rapids near the present town of Beverly, Washington.” Rigsby 1965)

wánatash (n) river bed.

wanawísh (n) rapids. (“big rapids where fish channels are located---fish can’t stay out in middle, have to come in to banks to make it up” AS/BR 18) — Táptatpa wanawíshpa pátwalutki panp’íwixa awíñshma. At Prosser rapids men dip salmon into nets.

Wanawísh (pn) Horn Rapids. (on Yakima R. between Benton City and W. Richland. “Indian people knew all about the fisheries...The Wanawísh fishery at the mouth of the Yákmu River was the first.” ES/MW)
Word forms

• words that are pronounced and used in texts, satisfy a formal requirement of the syntax
• every word form belongs to a lexeme
• differences between word forms mostly predictable, rule-governed (but *eat*, *ate*; *sheep*, *sheep*)
• inflection, “the relation between word-forms of a lexeme”
Figure 2.1 Subdivisions of morphology

(much more on inflection vs. derivation in ch. 5)
Types of morphemes

• Continuing with our convenient fiction (for now)
  – free morphemes---can stand alone as words
  – bound morphemes---cannot

• Parts of morphemes
  – phonological part of representation: formative, formal aspect
Affixes

• An affix
  – “cannot occur by itself” (p. 19) (hence bound)
  – “attaches to a word or a main part of a word”
  ➢ “usually has an abstract meaning”

(2.6) Russian case inflection (singular forms)

<table>
<thead>
<tr>
<th>Case</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>nominative</td>
<td>ruk-a</td>
</tr>
<tr>
<td>accusative</td>
<td>ruk-u</td>
</tr>
<tr>
<td>genitive</td>
<td>ruk-i</td>
</tr>
<tr>
<td>dative</td>
<td>ruk-e</td>
</tr>
<tr>
<td>locative</td>
<td>ruk-e</td>
</tr>
<tr>
<td>instrumental</td>
<td>ruk-oj</td>
</tr>
</tbody>
</table>
But do affixes always have abstract meanings?

(2.7) Nahuatl possessor inflection

<table>
<thead>
<tr>
<th></th>
<th>no-cal</th>
<th>my house’</th>
</tr>
</thead>
<tbody>
<tr>
<td>1sg</td>
<td>no-cal</td>
<td>‘my house’</td>
</tr>
<tr>
<td>2sg</td>
<td>mo-cal</td>
<td>‘your (sg) house’</td>
</tr>
<tr>
<td>3sg</td>
<td>i-cal</td>
<td>‘his/her house’</td>
</tr>
<tr>
<td>1pl</td>
<td>to-cal</td>
<td>‘our house’</td>
</tr>
<tr>
<td>2pl</td>
<td>amo-cal</td>
<td>‘your (pl) house’</td>
</tr>
<tr>
<td>3pl</td>
<td>in-cal</td>
<td>‘their house’</td>
</tr>
</tbody>
</table>
Affix types

- Attach “to a word or a main part of a word”---which part?
  - suffix—e.g. Russian case
  - prefix—e.g. Nahuatl possession
  - infix
  - circumfix
Infixes

• Tagalog *um*- infixation
  – *sulat* ‘write’, *s-um-ulat* ‘one who wrote’
  – *gradwet* ‘graduate’, *gr-um-adwet* ‘one who graduated’
• Infixes seem to challenge notion of morpheme integrity
• But possibly there are no infixes, infixes are just affixes subject to phonology of greater dominance (Prince and Smolensky 93)
  – Affix VC- as a prefix except when root is C-initial: Tagalog: *abot*, *um-abot* ‘? ’; vs. *tawag*, *t-um-awag* ‘one who called’
  – Affix CV- is a prefix except when root is V-initial: Pangasinán: *libro*, *li-libro* ‘books’; *amigo*, *a-mi-migo* ‘friends’
  – Infixation site always(?) phonologically defined, improves pronunciation
More on circumfixes

• Indonesian abstract nouns
  – besar ‘big’
  – ke-…-an (forms abstract nouns)
  – ke-besar-an ‘bigness, greatness’

• Unusual type of discontinuous morpheme

• Controversial: analyzable as prefix + suffix?
A possessive paradigm in Witsuwit’en

<table>
<thead>
<tr>
<th></th>
<th>English Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>[tho]</td>
<td>‘water’</td>
</tr>
<tr>
<td>[sthoʔ]</td>
<td>‘my water’</td>
</tr>
<tr>
<td>[nthoʔ]</td>
<td>‘your (sg.) water’</td>
</tr>
<tr>
<td>[nexwthoʔ]</td>
<td>‘your (pl.), our water’</td>
</tr>
<tr>
<td>[pethoʔ]</td>
<td>‘his/her/its water’</td>
</tr>
<tr>
<td>[heapethoʔ]</td>
<td>‘their water’</td>
</tr>
</tbody>
</table>

nito thoʔ ‘alcoholic beverage’ (lit. ‘white people’s water’)


<table>
<thead>
<tr>
<th>Affix</th>
<th>Meaning</th>
<th>Type</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>thọ</td>
<td>‘water’</td>
<td>root, free morpheme</td>
<td></td>
</tr>
<tr>
<td>-ʔ</td>
<td>possessed</td>
<td>affixes (bound morphemes)</td>
<td>suffix</td>
</tr>
<tr>
<td>s-</td>
<td>‘my’</td>
<td></td>
<td>prefixes</td>
</tr>
<tr>
<td>n-</td>
<td>‘your (sg.)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nəxʷ-</td>
<td>‘our, your (pl.)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pə-</td>
<td>‘his, her, its’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>həpə-</td>
<td>‘their’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Discontinuous morphemes common in Athabaskan languages.

Form: $\text{formative}_a + \text{formative}_b + ... = ' $'

Some examples of discontinuous morphemes:

$\text{we}_9\text{-i}_3\text{-} ... \text{-l}$ perfective negative

$\text{u}_3\text{-} ... \text{-ʔ}$ optative

O-$\text{u}_4\text{-jin}$ ‘pick O (berries) while stationary’

(cf. -jin ‘sg./du. stand’)
Roots, bases, stems

• all refer to what affixes attach to
• root
  – always 1 morpheme
  – inflectional or derivational morphemes can be added to
• stem/base
  – inflectional or derivational morphemes can be added to
  – but not always 1 morpheme
Roots vs. stems/bases

• *consider* (root)
  – consider-ation, re-consider
    • *-ation, *re-
  – reconsider-ation
    • *re-consider* is stem/base to which –ation is added
    • *re-
      – added to verbs: *rework, revamp, rethink, rekindle, reinspire...*
      – unless deverbal: *reworking, revamping, rethought, reconsideration...*
Bound roots vs. affixes

• Only semantically distinguishable?

• Affixes: “short morphemes with an abstract meaning”

• Bella Coola “lexical suffixes” (p. 21)

(2.8) -us ‘face’ -lik ‘body’
-an ‘ear’ -altwa ‘sky, weather’
-uc ‘mouth’ -lt ‘child’
-al ‘foot’ -lst ‘rock’
-ak ‘hand’ -lxs ‘nose’

(2.9) a. quć-ał-ic
    wash-foot-I.him
    ‘I am going to wash his foot’ (lit.: ‘foot-wash him’)

    b. kma-lxs-c
    hurt-nose-I
    ‘my nose hurts’ (lit.: ‘I nose-hurt’)

(Mithun 1998: 300-5)
**English bound roots**

- *cranberry, cranapple, *cran*
- Haspelmath and Sims’ *bio-* and –*crat* exx. p. 22

<table>
<thead>
<tr>
<th>(2.10) biogeography</th>
<th>aristocrat</th>
</tr>
</thead>
<tbody>
<tr>
<td>bioethics</td>
<td>autocrat</td>
</tr>
<tr>
<td>bioengineering</td>
<td>democrat</td>
</tr>
<tr>
<td>biorhythm</td>
<td>Eurocrat</td>
</tr>
<tr>
<td>bioterrorism</td>
<td>plutocrat</td>
</tr>
<tr>
<td>biomedicine</td>
<td>technocrat</td>
</tr>
<tr>
<td>biochip</td>
<td>theocrat</td>
</tr>
</tbody>
</table>

- notice concrete meanings
- German *bio* [bi.o] ‘organic’ now a free morpheme
- English *anthro* (e.g. *anthros*)
Allomorphs of a morpheme

• “One of the most common complications is that morphemes may have different phonological shapes under different circumstances”

• Allomorphs must have same meaning or function

• Allomorphs are in complementary distribution

• Predictable variants in phonological form of morpheme (a LING 451/551 topic)
Affix allomorphy

• e.g. English pl. suffix “-(e)s”, /z/

• Allomorphs of pl. suffix predictable from voicing and manner of articulation of final segment of noun

• -/z/ because other forms can be predicted from it with more general rules than alternatives (-/s/, -/əz/)
1. Somali exhibits a great amount of allomorphy in the plural formation of its nouns. Four different allomorphs are represented in the following examples. Based on these examples, formulate a hypothesis about the phonological conditions for each of the plural allomorphs. (In actual fact, the conditions are more complex, but for this exercise, we have to limit ourselves to a subset of the data and generalizations.)

<table>
<thead>
<tr>
<th>SINGULAR</th>
<th>PLURAL</th>
<th>‘grandfather’</th>
</tr>
</thead>
<tbody>
<tr>
<td>awowe</td>
<td>awowayaal</td>
<td></td>
</tr>
<tr>
<td>baabaco</td>
<td>baabacooyin</td>
<td>‘palm’</td>
</tr>
<tr>
<td>beed</td>
<td>beedad</td>
<td>‘egg’</td>
</tr>
<tr>
<td>buug</td>
<td>buugag</td>
<td>‘book’</td>
</tr>
<tr>
<td>cashar</td>
<td>casharro</td>
<td>‘lesson’</td>
</tr>
<tr>
<td>fure</td>
<td>furayaal</td>
<td>‘key’</td>
</tr>
<tr>
<td>ilmo</td>
<td>ilmooyin</td>
<td>‘tear’</td>
</tr>
<tr>
<td>miis</td>
<td>miisas</td>
<td>‘table’</td>
</tr>
<tr>
<td>qado</td>
<td>qadooyin</td>
<td>‘lunch’</td>
</tr>
<tr>
<td>shabeel</td>
<td>shabeello</td>
<td>‘leopard’</td>
</tr>
<tr>
<td>waraabe</td>
<td>waraabayaal</td>
<td>‘hyena’</td>
</tr>
<tr>
<td>xidid</td>
<td>xididdo</td>
<td>‘eagle’</td>
</tr>
</tbody>
</table>

Based on the generalizations found, form the plural of the following nouns:

- *tuulo*  ‘village’
- *tog*     ‘river’

Somali
Root allomorphy

- Classical Greek

<table>
<thead>
<tr>
<th>Nom.</th>
<th>Gen.</th>
</tr>
</thead>
<tbody>
<tr>
<td>aitʰiops</td>
<td>aitʰiopos</td>
</tr>
<tr>
<td>pʰleps</td>
<td>pʰlebos</td>
</tr>
</tbody>
</table>

nom. –s, gen. –os

- /pʰlep/ or /pʰleb/?

If /pʰlep/, predicts gen. *[pʰlepos]*
If /pʰleb/, predicts nom. *[pʰlebs]*

Neither is correct. Adjust via pronunciation rules.

Intervocalic voicing of /p/? *[pʰlepos] → [pʰlebos]

If so, why doesn’t apply to [aitʰiopos]?

Assimilatory devoicing of /b/? *[pʰlebs] → [pʰleps]

Result: fictitious underlying representations  /aitʰiop/ ‘Ethiopian’, /pʰleb/ ‘vein’
Phonological vs. suppletive allomorphy

• Phonological allomorphy
  – phonological allomorphs facilitate pronunciation
  – phonetically motivated phonological rules
  – dividing line between phonol, morph not always clear (more on this in ch. 10)

• Suppletive allomorphs, “not at all similar in pronunciation” (p. 24)
  – to be, he/she/it is
  – good, better
Weak vs. strong suppletion

• Weak suppletive allomorphs: “exhibit some similarity, but this cannot be described by phonological rules”
  ... (a continuum)

• Strong suppletive allomorphs: “exhibit no similarity at all”
Italian inhabitant nouns

Italian inhabitant nouns (e.g. Anconetano ‘person from Ancona’) exhibit different degrees of similarity to the corresponding city names. Order the following pairs of city names and inhabitant names on a scale from clear suppletion in the base form to clear non-suppletion, depending on the number of segments in which the base for the inhabitant noun differs from the base for the city name (see Crocco-Galèa 1991). Assume that word-final vowels are suffixes in Italian; the base for Ancona would thus be Ancon-. Additionally, inhabitant nouns contain the suffixes -an, -in, or -es, so the base for Anconetano is Anconet-.

<table>
<thead>
<tr>
<th>CITY NAME</th>
<th>INHABITANT NOUN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ancona</td>
<td>Anconetano</td>
</tr>
<tr>
<td>Bologna</td>
<td>Petroniano</td>
</tr>
<tr>
<td>Bressanone</td>
<td>Brissinese</td>
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<tr>
<td>Domodossola</td>
<td>Domese</td>
</tr>
<tr>
<td>Gubbio</td>
<td>Eugubino</td>
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<tr>
<td>Ivrea</td>
<td>Eporediese</td>
</tr>
<tr>
<td>Milano</td>
<td>Milanese</td>
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<tr>
<td>Napoli</td>
<td>Partenopeo</td>
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<tr>
<td>Palermo</td>
<td>Palermitano</td>
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<td>Palestrina</td>
<td>Prenestino</td>
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<td>Piacenza</td>
<td>Piacentino</td>
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<td>Savona</td>
<td>Savonese</td>
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<td>Trento</td>
<td>Trentino</td>
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<tr>
<td>Treviso</td>
<td>Trevigiano</td>
</tr>
<tr>
<td>Venezia</td>
<td>Veneziano</td>
</tr>
<tr>
<td>Volterra</td>
<td>Volaterrano</td>
</tr>
</tbody>
</table>

‘Milan’
‘Naples’
‘Venice’