Compounds and word trees

LING 481/581
Winter 2011
Organization

• Compounds
  – heads
  – types of compounds

• Word trees
Compounding

• [root] [root]
  – machine gun
  – land line
  – snail mail
  – top-heavy
  – fieldwork

• Notice variability in punctuation (to ignore)
Compound stress

- Green Lake
- bluebird
- fast lane
- Bigfoot
- bad boy
- old school
- hotline
- Myspace
Compositionality

• (Extent to which) meanings of words, phrases determined by
  – morpheme meaning
  – structure

• Predictability of meaning in compounds
  – ’roid rage (< 1987; ‘road rage’ < 1988)
  – football (< 1486; ‘American football’ 1879)
  – soap opera (< 1939)
Head

• ‘A word in a syntactic construction or a morpheme in a morphological one that determines the grammatical function or meaning of the construction as a whole. For example, *house* is the head of the noun phrase *the red house*...’ Aronoff and Fudeman 2011
Righthand head rule

• In English (and most languages), **morphological** heads are the rightmost non-inflectional morpheme in the word
  – Lexical category of entire compound = lexical category of rightmost member
  – Not Spanish (HS example p. 139)

• English *be-*
  – *devil, bedevil*
### Compounding and lexical category

<table>
<thead>
<tr>
<th></th>
<th>noun</th>
<th>verb</th>
<th>adjective</th>
</tr>
</thead>
<tbody>
<tr>
<td>noun</td>
<td>machine gun</td>
<td>friend request</td>
<td>skin-deep</td>
</tr>
<tr>
<td></td>
<td></td>
<td>foot bail rage</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>quit</td>
<td></td>
</tr>
<tr>
<td>verb</td>
<td>thinktank</td>
<td>stir-fry(?)</td>
<td>?</td>
</tr>
<tr>
<td>adjective</td>
<td>high school</td>
<td>dry-clean(?) low-ball</td>
<td>red-hot</td>
</tr>
</tbody>
</table>

‘the V+N pattern is unproductive and limited to a few lexically listed items, and the N+V pattern is not really productive either.’ HS: 138
Heads of words

• **Morphosyntactic head**: determines lexical category
  – syntactic distribution
    • *That thinktank is overrated.*
  – morphological characteristics; e.g. inflection
    • plurality: *highschool → highschools*
    • tense on V: *dry-clean → dry-cleaned*
    • case on N
      – Sahaptin
        wáyxťi- “run, race”
        wayxtitpamá “pertaining to racing”
        wayxtitpamá k'úsi ‘race horse’
        Máytski=ish á-shapaxwnawiinknik-xa-na wayxtitpamá k'úsi-nan...
        morning=I 3s.obv-lunge-hab-past race horse-acc
        “In the morning, I used to lunge race horses...”
• **semantic head:**
  – the whole compound is a *hyponym* of the head
  – *highschool* is a kind of *school*

  – “tray table”
    • a kind of table
  – Canadian English: “table tray”
    • a kind of tray
• What is the semantic **head** of each?

• *blackbird, girlfriend, White House, looking glass, African-American, easy-going, download, kill-joy, whitewater rafting club member, laptop, scuttlebutt, game-changer, highrise*

• “A blackbird is a type of ____”
• Usually, semantic and morphosyntactactic heads are the same

• → **Types of compound** (based on semantic headedness)
Endocentric compounds

• ‘An endocentric compound is one that has a head. The head expresses the core meaning of the compound, and it belongs to the same lexical category as the compound as a whole.’ Aronoff and Fudeman 2011

• HS: ‘the term endocentric means that the semantic head...is ‘inside’ (endo-) the compound’

• textbook, caveman, mail-carrier, download, stir-crazy
Exocentric compounds

- HS: ‘their semantic head is “outside” (exo-) the compound’
  - swansong
    - not a type of song; ‘a final/farewell performance’
  - highbrow
    - not a type of brow; ‘fancy; of high society’
  - four-eyes
    - not a type of eye(s); ‘a person who has four eyes; i.e. wears glasses’
  - hothead
    - ‘a person whose head is hot, prone to anger’
  - red-hot
    - ‘a type of candy’
  - the low-down
    - ‘the fundamental information; a summary of the news’
  - a put-down
    - ‘an insult; a negative remark’
## Some exocentric compounds

<table>
<thead>
<tr>
<th></th>
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<tr>
<td>noun</td>
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<td>highbrow</td>
<td>red-hot</td>
</tr>
<tr>
<td></td>
<td>hothead</td>
<td></td>
</tr>
<tr>
<td>num</td>
<td>four-eyes</td>
<td></td>
</tr>
</tbody>
</table>
Coordinative compounds

• HS: ‘compounds that have more than one semantic head. In these compounds, each member has a separate referent. Both members are on an equal footing, and they can be paraphrased with ‘and’”
  – a father-daughter event
• ‘and’ in some form in the compound (if these are compounds)
  – p’s-&-q’s
  – odds-n-ends
  – bread-n-butter
• HS: ‘Coordinative compounds are widespread in the world’s languages, but they happen to be rare in European languages, including English’
Coordinative compounds

Korean

(7.10) elun-ai  ‘adult and child’ (elun ‘adult’ + ai ‘child’)
ma-so  ‘horses and cattle’ (ma ‘horse’ + so ‘cow’)
non-path  ‘farm’ (non ‘rice field’ + path ‘dry field’)
o-nwui  ‘brother and sister’ (o ‘brother’ + nwui ‘sister’)
son-pal  ‘hand and foot’ (son ‘hand’ + pal ‘foot’)

(Sohn 1994: 416–7)
Appositional compounds

‘both compound members have the same referent’ very difficult to distinguish from endocentric, where compound narrows reference of head

HS example: student worker
   “a type of worker”
   but also “a type of student”

Other possible examples
• apeman (vs. caveman)
• hunter-gatherer (vs. blueberry gatherer)
• student-teacher (vs. history teacher)
• singer-songwriter (vs. country songwriter)
• blue-green (green(*ish)-blue), red-orange (vs. orange-red?)
Headedness and MS features

• HS 143: “The formal head of a compound is thus the morphosyntactic locus of the compound, in that it is the place where the morphosyntactic features of the compound are expressed.”
  – Spanish año luz ‘light year’, pl. años luz
  – lipstick, pl. lipsticks: lip + sticks

• “Compounds that are not semantically endocentric do not necessarily behave like formally headed compounds.”
  – Spanish coordinative compound actor-bailarín ‘actor-dancer’, pl. actores-bailarines
  – English exocentric compound sabertooth, pl. sabertooths, *sabertooth
Plural marking inside endocentric compounds

my skates

my ____ bag
what’s the difference?

*glasses* and other nouns are *pluralia tantum* (inherently plural)
Affixes as heads of derived words

• Derived lexemes may be said to be headed by their category-changing affixes, which determine the overall word-class and the inflections
Words and tree structures

learn [lɜːn]
learnable [ˈlɜːnəbəl]
learnability [ˈlɜːnəbɪlɪtɪ]

Tree structure:
```
   N
 /   |
Adj   N
 |   |
V    Adj
     |
 learn able
```
Another use for word tree structures

• Represent ambiguity
  – ambiguous = “having more than one meaning”

• Sources of ambiguity in words
  – different meanings of same morpheme
    • hard ‘solid, difficult’
  – homophonous morphemes
    • bank
  – structure
  – more than one of above
An ambiguous headline

• HERSEY BARS PROTEST
  – [Hershey bars] protest
  – Hershey [bars protest]
An ambiguous word: *unfoldable*

block of wood: ‘not capable of being folded’

origami figure: ‘capable of being unfolded’

un- negative: $\text{Un Adj [___ Adj [fold able]}}$

un- ‘reverse’: $\text{V [___ V[fold able]}}$
(proposed) Athabaskan verb structure

Rice, Keren (2000)
Morpheme order and
semantic scope. Cambridge:
Cambridge University Press.
Compounds in Mandarin Chinese

• Mandarin—very little affixation
  – -/ʔə/ ‘little’ (diminutive) (also means ‘son’)
• Some compounds
  – [wàŋ tɛʰjɔ̌w]
    ‘net’ ‘ball’
    ‘tennis’
  – [kwàn tɛjá]
    ‘manage’ ‘house’
    ‘housekeeper’
Identify the morphological constituents and describe their meanings in the following Mandarin Chinese nouns.

<table>
<thead>
<tr>
<th>Character</th>
<th>Meaning</th>
<th>Character</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>chàngcí</td>
<td>'libretto'</td>
<td>dǐngdēng</td>
<td>'top light'</td>
</tr>
<tr>
<td>chàngjī</td>
<td>'gramophone'</td>
<td>dìanche</td>
<td>'streetcar, tram'</td>
</tr>
<tr>
<td>chuánwēi</td>
<td>'stern'</td>
<td>diàndēng</td>
<td>'electric lamp'</td>
</tr>
<tr>
<td>cíwěi</td>
<td>'suffix'</td>
<td>diànji</td>
<td>'electrical machine'</td>
</tr>
<tr>
<td>diànli</td>
<td>'electric power'</td>
<td>qíchē</td>
<td>'car'</td>
</tr>
<tr>
<td>diànshì</td>
<td>'television'</td>
<td>qíchuán</td>
<td>'steamship'</td>
</tr>
<tr>
<td>dōngwùxué</td>
<td>'zoology'</td>
<td>shāndìng</td>
<td>'summit'</td>
</tr>
<tr>
<td>dōngwùyōu</td>
<td>'animal oil'</td>
<td>shìchàng</td>
<td>'sightseeing'</td>
</tr>
<tr>
<td>dōngwùyuán</td>
<td>'zoo'</td>
<td>shìlì</td>
<td>'eyesight'</td>
</tr>
<tr>
<td>fāngdēng</td>
<td>'roof'</td>
<td>shūcí</td>
<td>'number word'</td>
</tr>
<tr>
<td>fāngkè</td>
<td>'tenant'</td>
<td>shuǐchē</td>
<td>'watercart'</td>
</tr>
<tr>
<td>fēichuán</td>
<td>'airship'</td>
<td>shuǐlì</td>
<td>'waterpower'</td>
</tr>
<tr>
<td>fēijī</td>
<td>'aeroplane'</td>
<td>shūxué</td>
<td>'mathematics'</td>
</tr>
<tr>
<td>fēiyú</td>
<td>'flying fish'</td>
<td>wěidēng</td>
<td>'tail light'</td>
</tr>
<tr>
<td>huāchē</td>
<td>'festooned vehicle'</td>
<td>wěishuǐ</td>
<td>'tail water'</td>
</tr>
<tr>
<td>huāyuán</td>
<td>'flower garden'</td>
<td>yóudēng</td>
<td>'oil lamp'</td>
</tr>
<tr>
<td>jīchē</td>
<td>'locomotive'</td>
<td>yóuzhǐ</td>
<td>'oil paper'</td>
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<tr>
<td>jiàoli</td>
<td>'strength of one's legs'</td>
<td>yúyóu</td>
<td>'fish oil'</td>
</tr>
<tr>
<td>kēfáng</td>
<td>'guest house'</td>
<td>zhīhuā</td>
<td>'paper flower'</td>
</tr>
</tbody>
</table>

are any exocentric?
# Czech

endocentric, exocentric, coordinative, or appositional compounds?

<table>
<thead>
<tr>
<th>Czech</th>
<th>literal translation</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>spolu-pra:ce</td>
<td>together-work</td>
<td>cooperation</td>
</tr>
<tr>
<td>lido-jed</td>
<td>human-eat</td>
<td>cannibal</td>
</tr>
<tr>
<td>pozoru-hodni</td>
<td>attention-worthy</td>
<td>remarkable</td>
</tr>
<tr>
<td>vrťi-xvost</td>
<td>wag-tail</td>
<td>fidgety</td>
</tr>
<tr>
<td>vjetro-plax</td>
<td>wind-chase</td>
<td>unreliable person</td>
</tr>
<tr>
<td>strať-pitel</td>
<td>scare-bag</td>
<td>cowardly person</td>
</tr>
<tr>
<td>kafe-brawn-do-zelena</td>
<td>coffee-brown-in-green</td>
<td>khaki color</td>
</tr>
<tr>
<td>sem-tam</td>
<td>here-there</td>
<td>both ways</td>
</tr>
<tr>
<td>volki-nevolki</td>
<td>willing-not.willing</td>
<td>willy-nilly</td>
</tr>
<tr>
<td>široko-daleko</td>
<td>wide-far</td>
<td>at a distance</td>
</tr>
</tbody>
</table>