

How To Make a Dictionary:

Types of lexical information: morphology
(inflection and word formation)

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B.A. British And American Studies
Basic Module 2

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[Class Website](#)

INTRODUCTION: WORD FORMATION

Why word formation? Who needs it?

- Why?
 - New concepts require new words
 - Sometimes new words are invented on the spot

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- Who?
 - Scientists
 - Engineers
 - Product branding companies
 - Poets
 - Everybody else

Why word formation? Who needs it?

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 - New concepts require new words
 - Sometimes new words are invented on the spot
- Who?
 - Scientists
 - Engineers
 - Product branding companies:
 - <http://www.lexicon-branding.com/>
 - http://www.stanford.edu/class/linguist34/Unit_08/lexicon.htm
 - <http://www.nomen.de/public/start.php?lang=de>
 - Everybody
 - including poets...



Jabberwocky

(Lewis Carroll, Alice Through the Looking Glass)



'Twas brillig, and the slithy toves
Did gyre and gimble in the wabe;
All mimsy were the borogoves,
And the mome raths outgrabe.

"Beware the Jabberwock, my son!
The jaws that bite, the claws that catch!
Beware the Jubjub bird, and shun
The frumious Bandersnatch!"

He took his vorpal sword in hand:
Long time the manxome foe he sought-
So rested he by the Tumtum tree,
And stood awhile in thought.

And, as in uffish thought he stood,
The Jabberwock, with eyes of flame,
Came whiffling through the tulgey wood,
And burbled as it came!

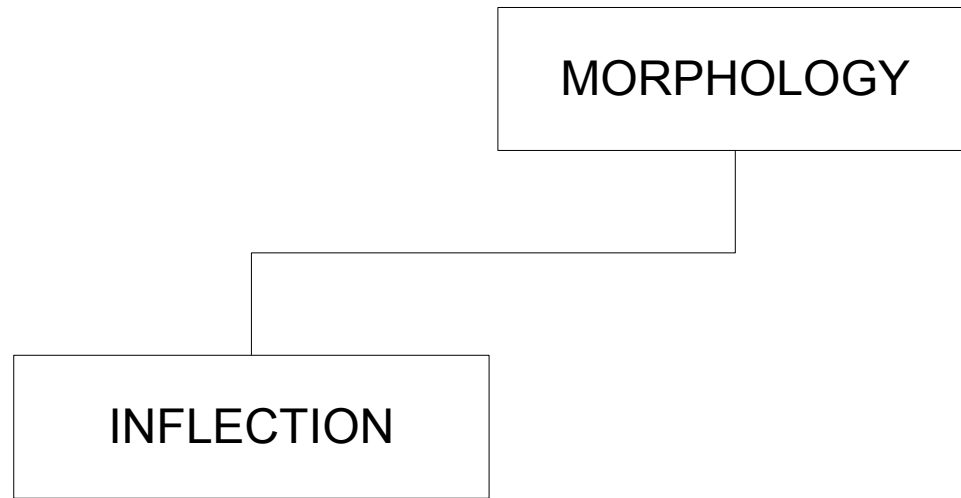
One, two! One, two! And through and
through
The vorpal blade went snicker-snack!
He left it dead, and with its head
He went galumphing back.

"And hast thou slain the Jabberwock?
Come to my arms, my beamish boy!
A frabjous day! Callooh! Callay!"
He chortled in his joy.

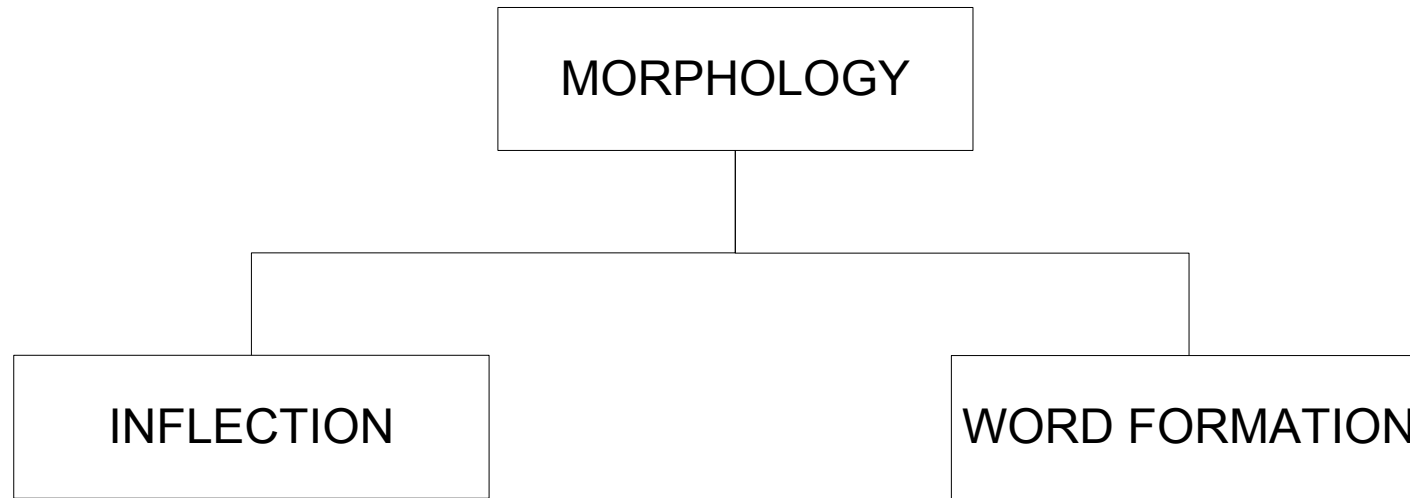
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MORPHOLOGICAL STRUCTURE

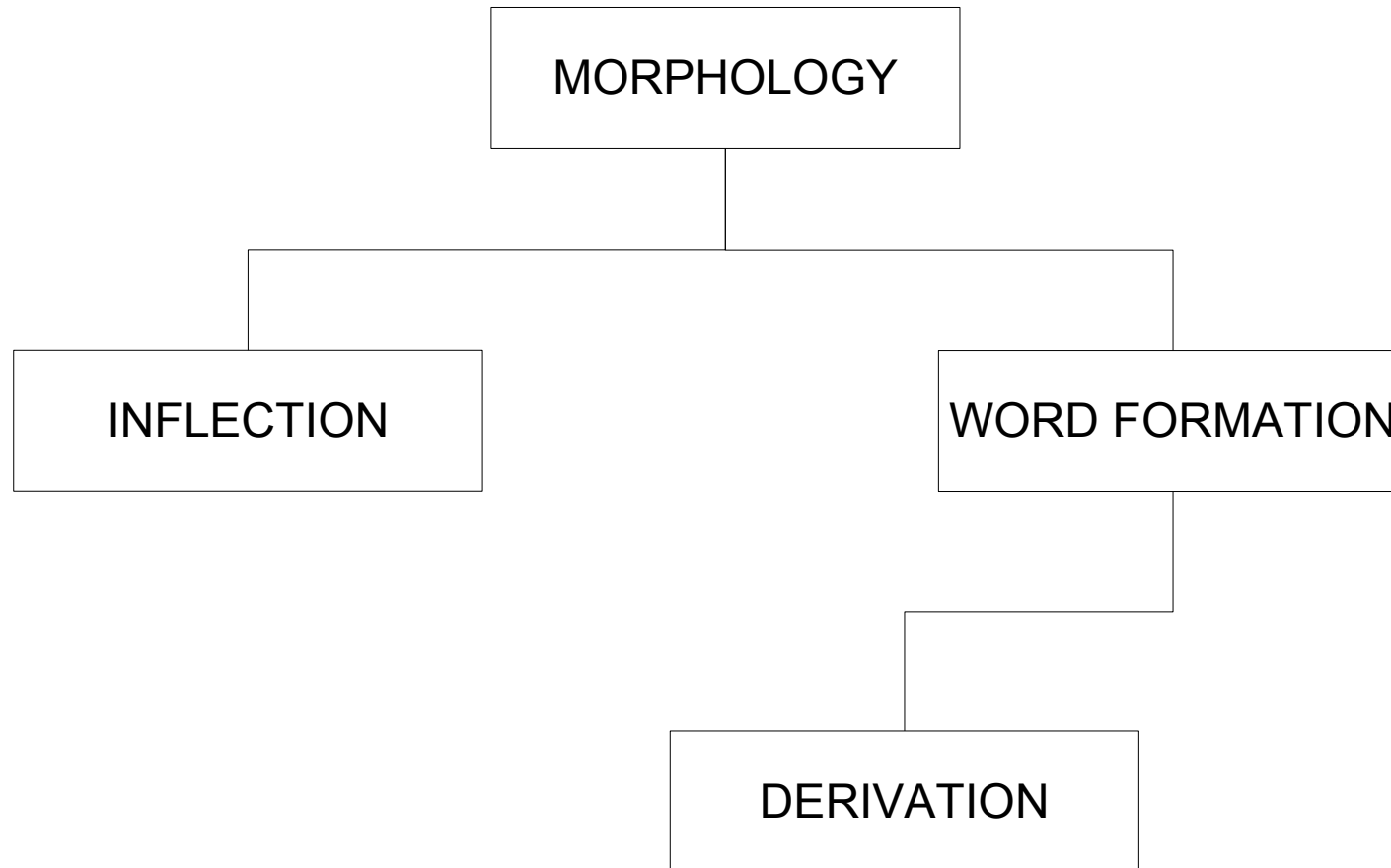
Branches of morphology



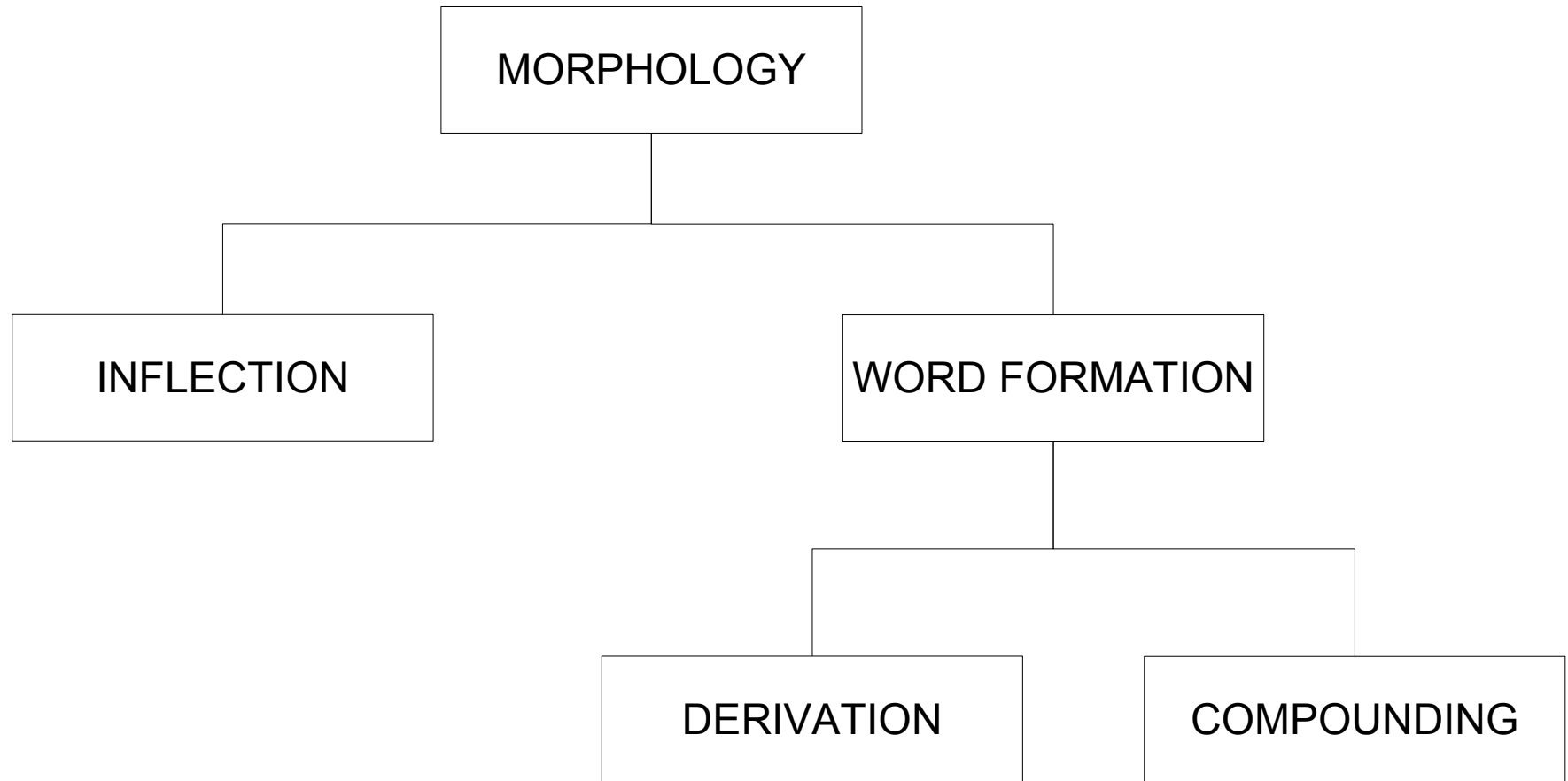
Branches of morphology



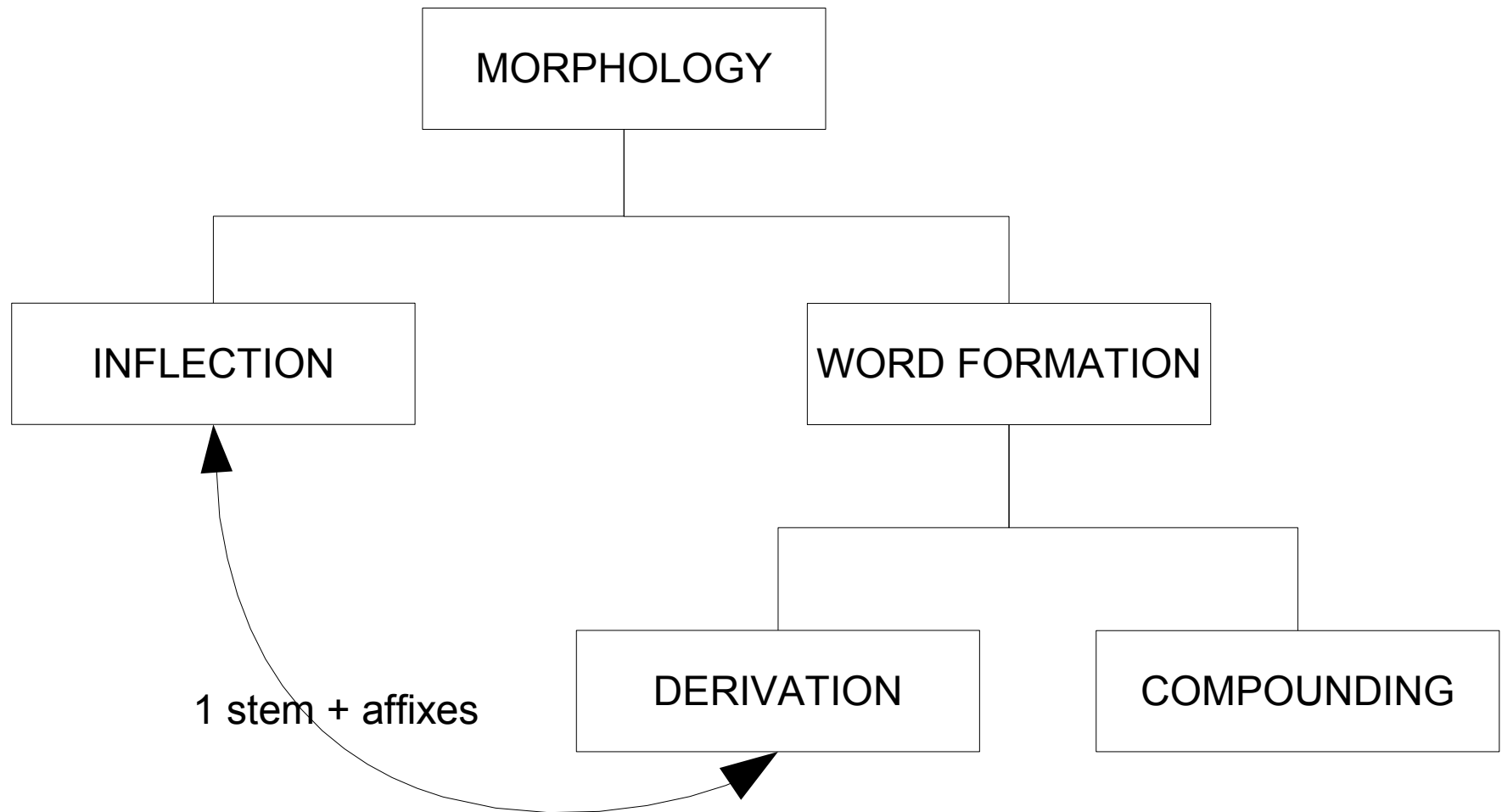
Branches of morphology



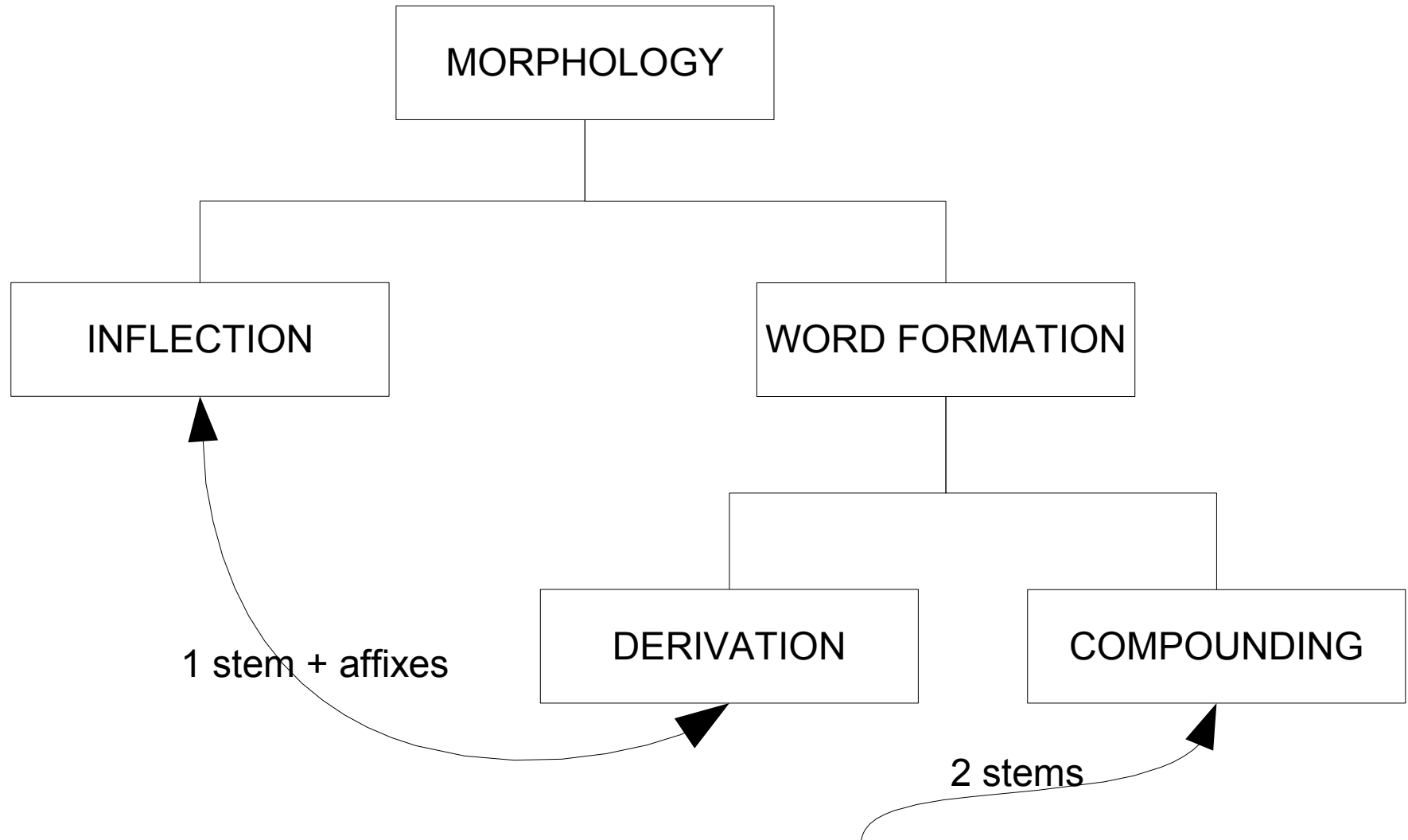
Branches of morphology



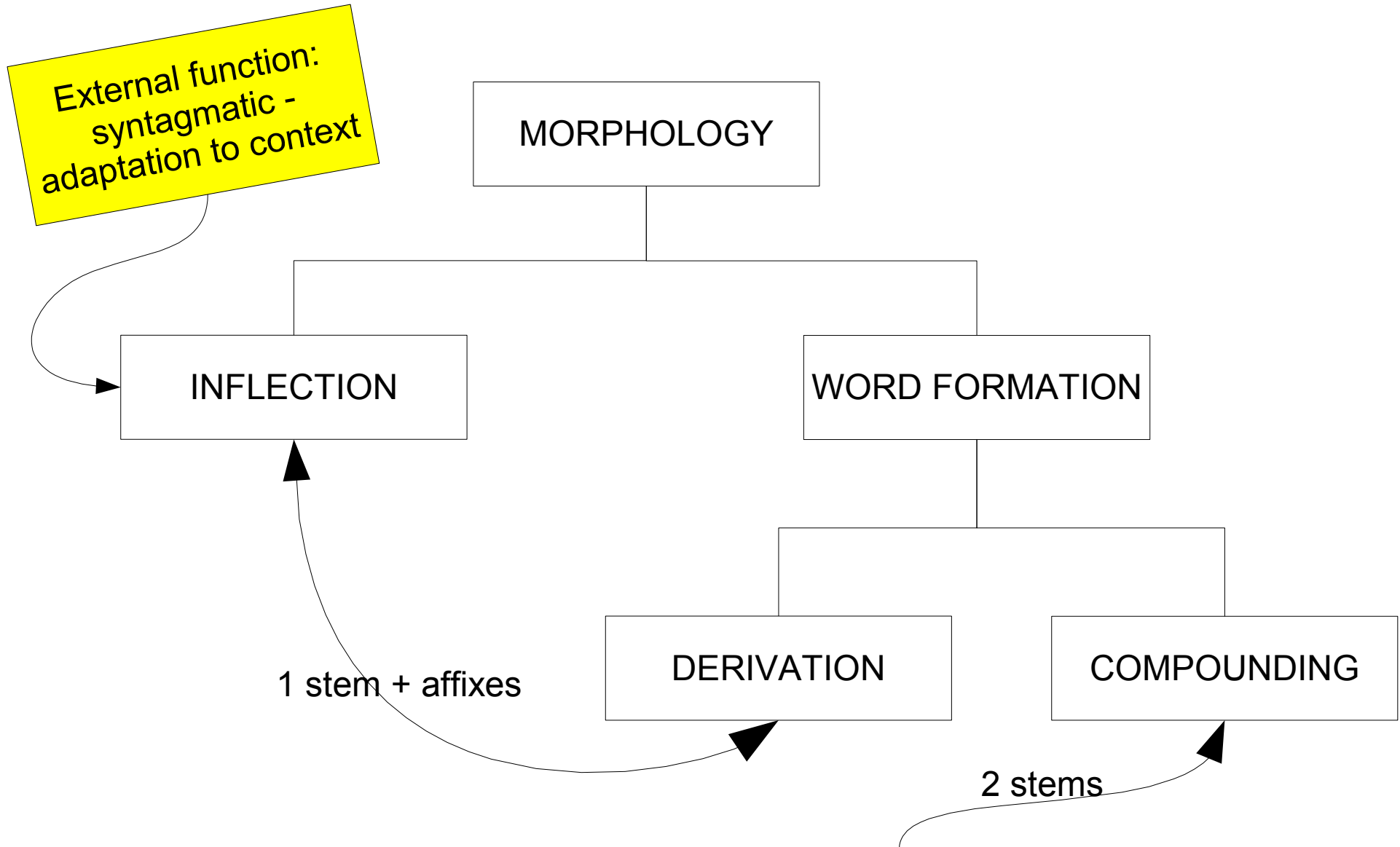
Branches of morphology



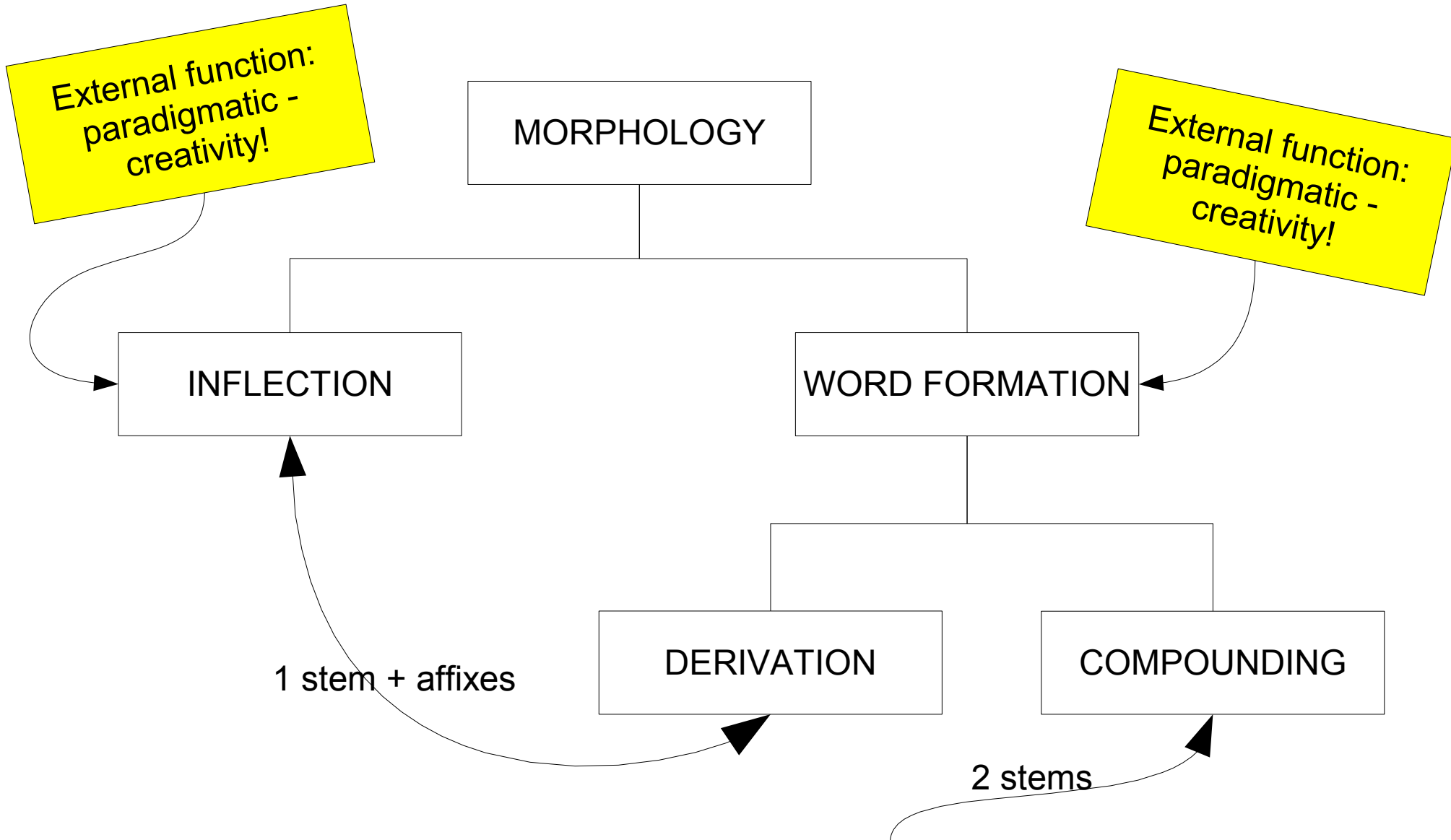
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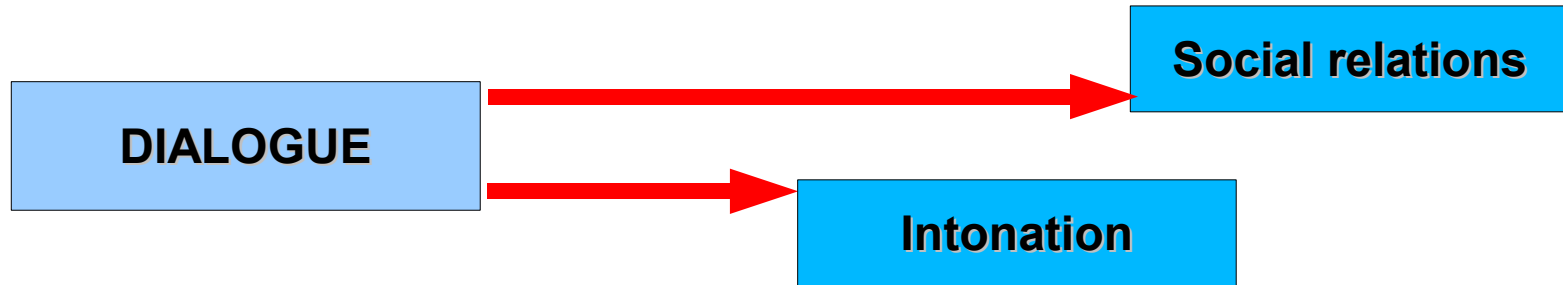
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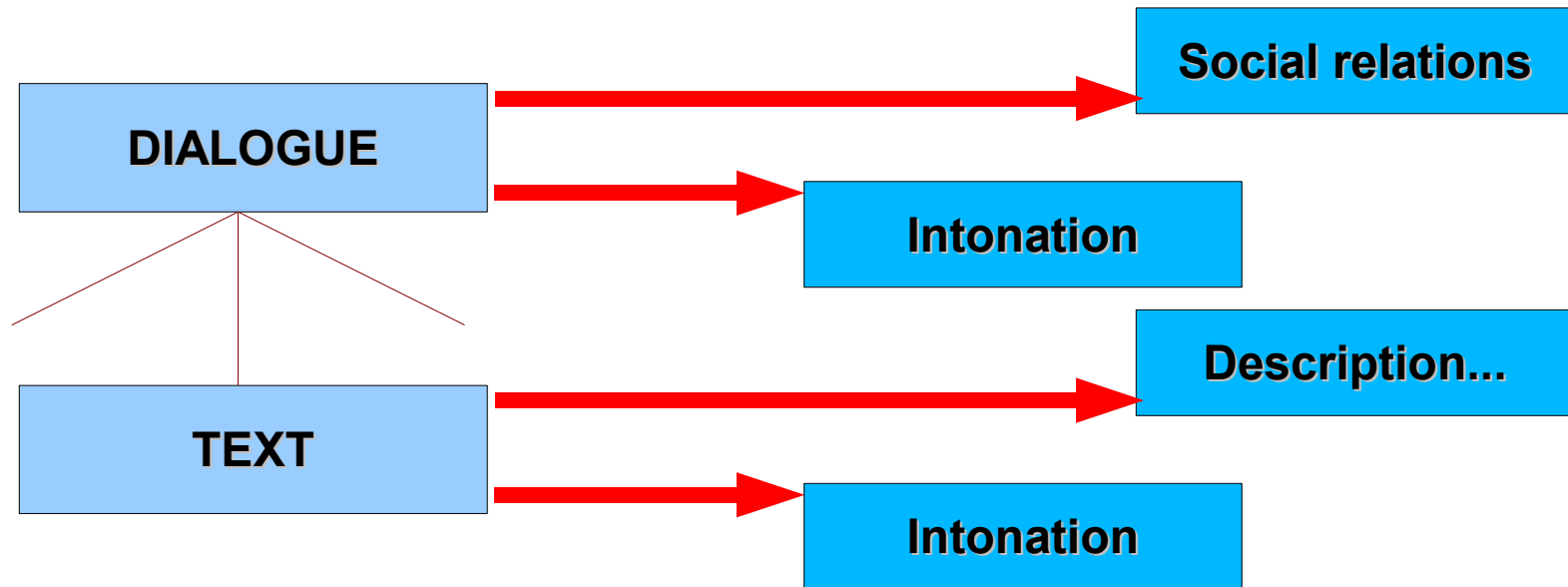
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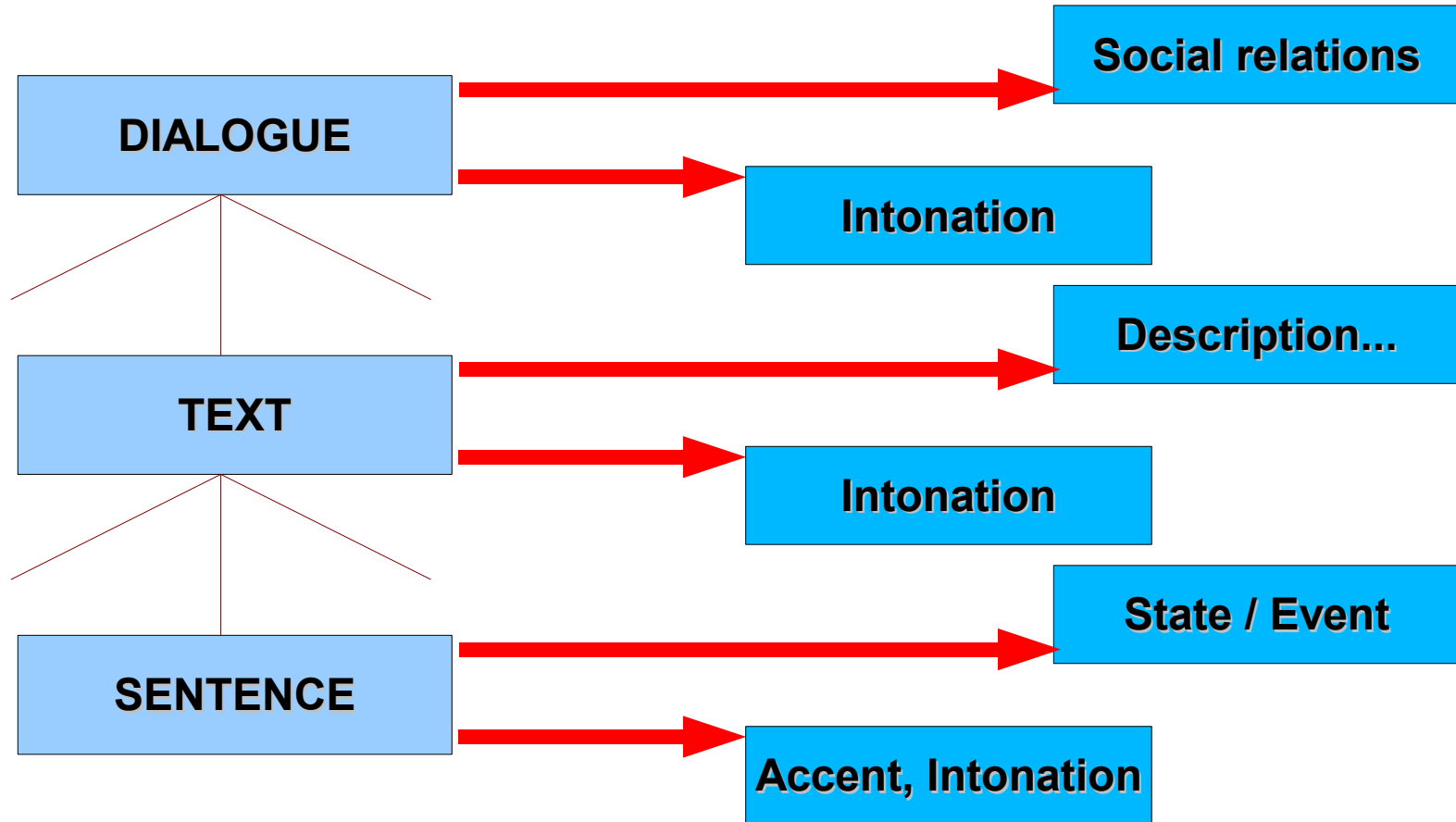
Reminder: signs



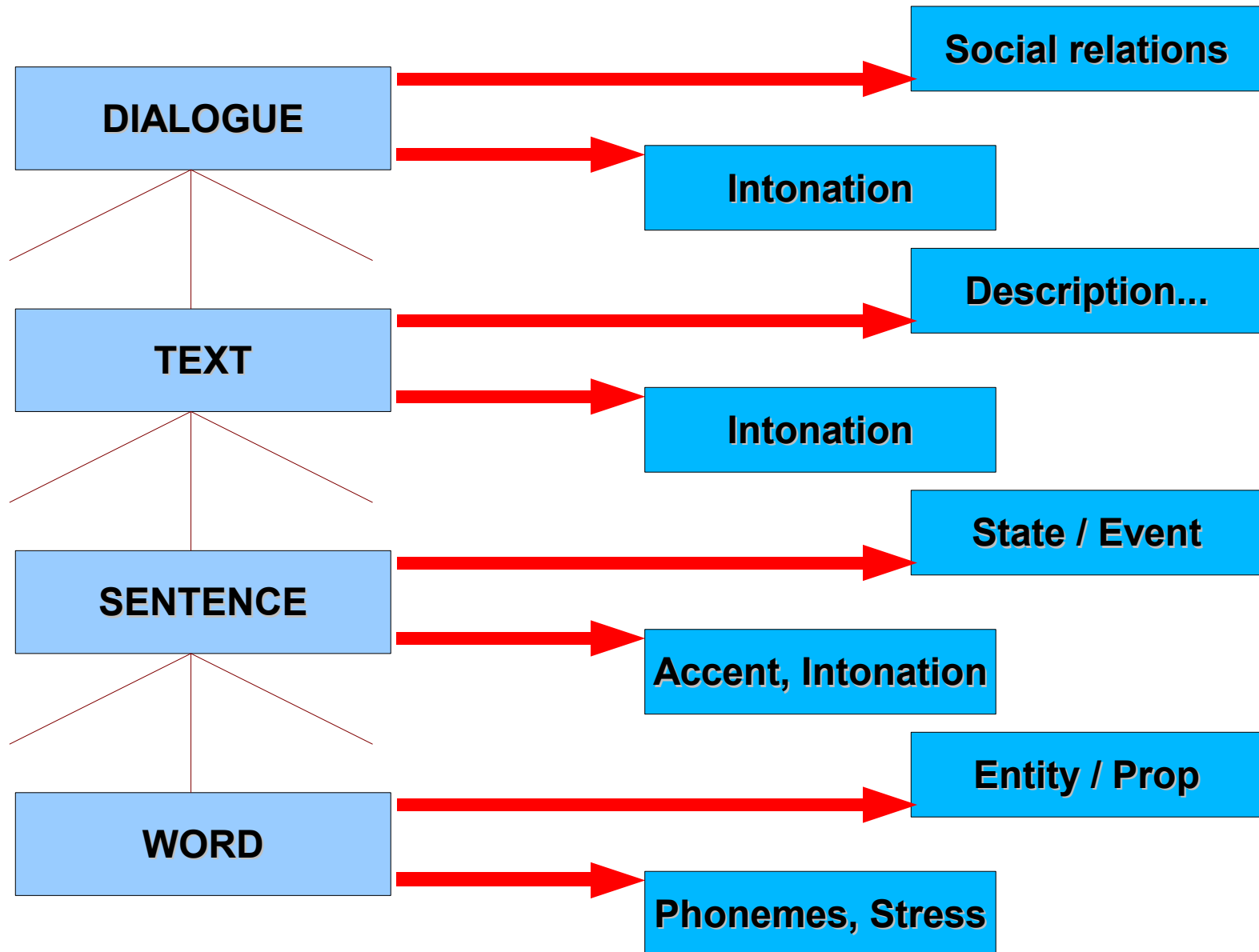
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Reminder: signs



Morphology sketch

- Inflection:
 - Function (external structure):
 - marks the relation of words to their contexts
 - no change in the basic meaning of words
 - Form (internal structure):
 - affix (prefix, suffix, infix), superfix, stem vowel change

Morphology sketch

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 - Function (external structure):
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 - Form (internal structure):
 - affix (prefix, suffix, infix), superfix, stem vowel change
- Word formation:
 - Function (external structure):
 - creation of new words / parts of speech / meanings
 - in principle infinite extendability of the lexicon
 - Form (internal structure):
 - Root/morpheme creation (blending, abbreviation, ...)
 - Derivation: 1 stem + affix (prefix, suffix, infix), superfix, vowel change
 - Compounding: 2 stems, perhaps with interfix or inflection-like affix

INTERNAL STRUCTURE OF WORDS

Smallest word parts: morphemes

- Morphemes are:
 - smallest meaningful parts of words
- There are 2 main morpheme types:
 - lexical morpheme (content morpheme, root):
 - open set:
 - girl, boy, car, box, spoon, grass, sky
 - grammatical morpheme (structural morpheme):
 - closed set
 - free:
 - prepositions, conjunctions, auxiliary verbs
 - bound:
 - affixes, suffixes (in word formation and inflection)

–

Morphemes and allomorphs

- Morphemes are realised in different contexts by
 - allomorphs
 - i.e. variant pronunciations
- Example:
 - Nouns:
 - cats, dogs, horses, oxen, men, women, children
 - /kæts/, /dɒgz/, /hɔːsɪz/, /ɒksən/, /men/, /wɪmɪn/, /tʃɪldrən/
 - Verbs:
 - hits, bids, hisses, buzzes, itches
 - /hɪts/, /bɪdz/, /hɪsəz/, bʌzəz/, /ɪtʃɪz/

How are words built?

- Inflection:
 - Function (external structure):
 - marks the *syntagmatic* relation of words to their contexts
 - syntactic contexts (agreement in person, number, case):
 - subject-verb (English)
 - subject verb; determiner - adjective - noun, preposition-nominals (German)
 - situational contexts:
 - Verbs: temporal relations, spatial relations
 - Nominals: quantity and definiteness relations
 - Form (internal structure): stem + affix
 - prefix
 - suffix
 - circumfix
 - infix
 - superfix

How words are built - form + function

- Root / morpheme creation:
 - Function (external structure):
 - creates new POS and meanings
 - Form (internal structure): parts of 2 or more existing stems:
 - brunch
 - chortle
 - galumph
 - ...

How words are built - form + function

- Derivation:
 - Function (external structure):
 - creates new POS and meanings from 1 existing stem
 - Form (internal structure): 1 stem + affix
 - prefix
 - suffix
 - circumfix
 - infix
 - superfix

How words are built - form + function

- Compounding:
 - Function (external structure):
 - creates meanings (maybe new POS)
 - Form (internal structure): from at least 2 existing stems
 - lamp-post
 - whisky-soda
 - red-head

INTERNAL STRUCTURE

English words consist of ...

- a stem and an inflection
 - a stem has *lexical meaning*
 - e.g.
 - table, chair, cabbage, happiness, wonderful, blog
 - teɪbl/, /tʃɛə/, /kæbɪdʒ/, /hæpɪnəs/, /wʌndəfʊl/, /blɒɡ/
 - an inflection has *grammatical meaning*
 - relates a word to its syntactic context
 - subject-verb agreement (person, case, number)
 - relates a word to its semantic context
 - tense/time, quantity, speaker-addressee, ...
 - e.g.:
 - cats, dogs, horses, oxen, men, women, children
 - /kæts/, /dɒgz/, /hɔːsɪz/, /ʃi:p/, /ɒksən/, /mɛn/, /wɪmɪn/, /tʃɪldrən/

Inflexions of English words are

- suffixes (or stem vowel changes):
 - person:
 - number:
 - case:
- However, inflexions in other languages may be:
 - prefixes (many African languages)
 - suffixes (as in English and German)
 - circumfixes (German)
 - superfixes (stress languages; tone languages)
- For discussion:
 - List systematically inflectional suffixes of English and of German.

Stems of English words are...

- Simple (i.e. roots, lexical morphemes)
 - red, table, run, car, knit, ...
- Complex, i.e. at least one of the following:
 - Derivations:
 - a stem and a derivational affix, e.g.
 - red+ish = reddish, beauty + ful = beautiful
 - Compounds:
 - a stem plus another stem, e.g.
 - armchair, whisky-soda, red-head
 - Both (synthetic compounds):
 - a derivation plus a stem, e.g.
 - bus-driver, steam-roller

A hierarchy of words and their parts

WORD = STEM + INFLECTION
(English: nouns, pronouns, verbs)

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STEM / BASE

INFLECTION: affix
prefix
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circumfix
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ablaut

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STEM / BASE

COMPOUND STEM: 2 stems

INFLECTION: affix
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ablaut

A hierarchy of words and their parts

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STEM / BASE

COMPOUND STEM: 2 stems

DERIVED STEM: 1 stem + affix

INFLECTION: affix
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A hierarchy of words and their parts

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STEM / BASE

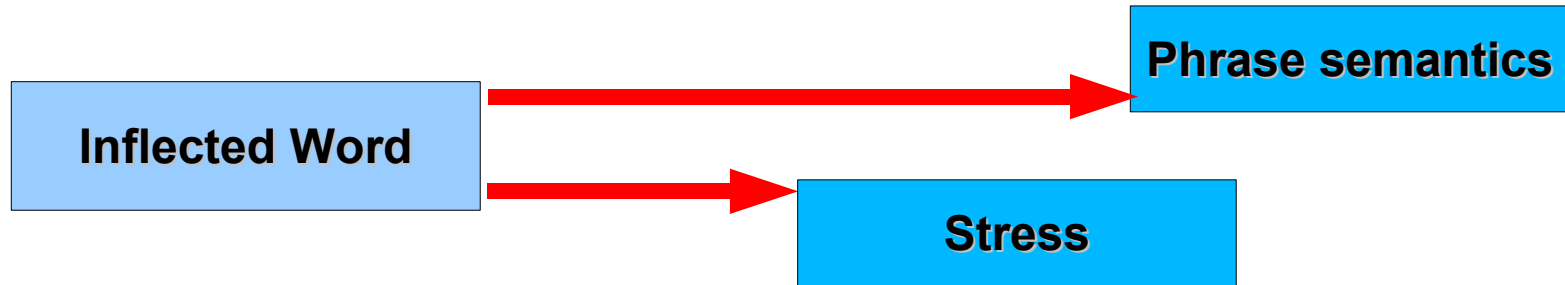
COMPOUND STEM: 2 stems

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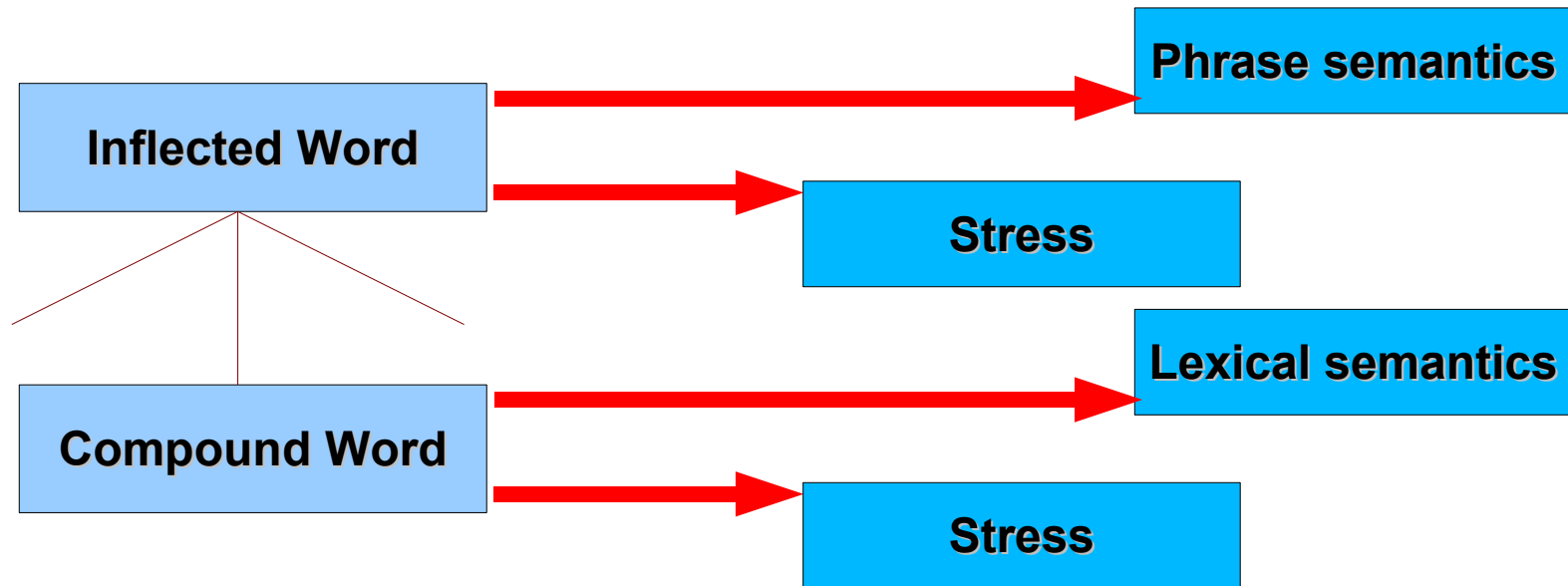
ROOT (lexical morpheme)

INFLECTION: affix
prefix
suffix
infix
circumfix
superfix
ablaut

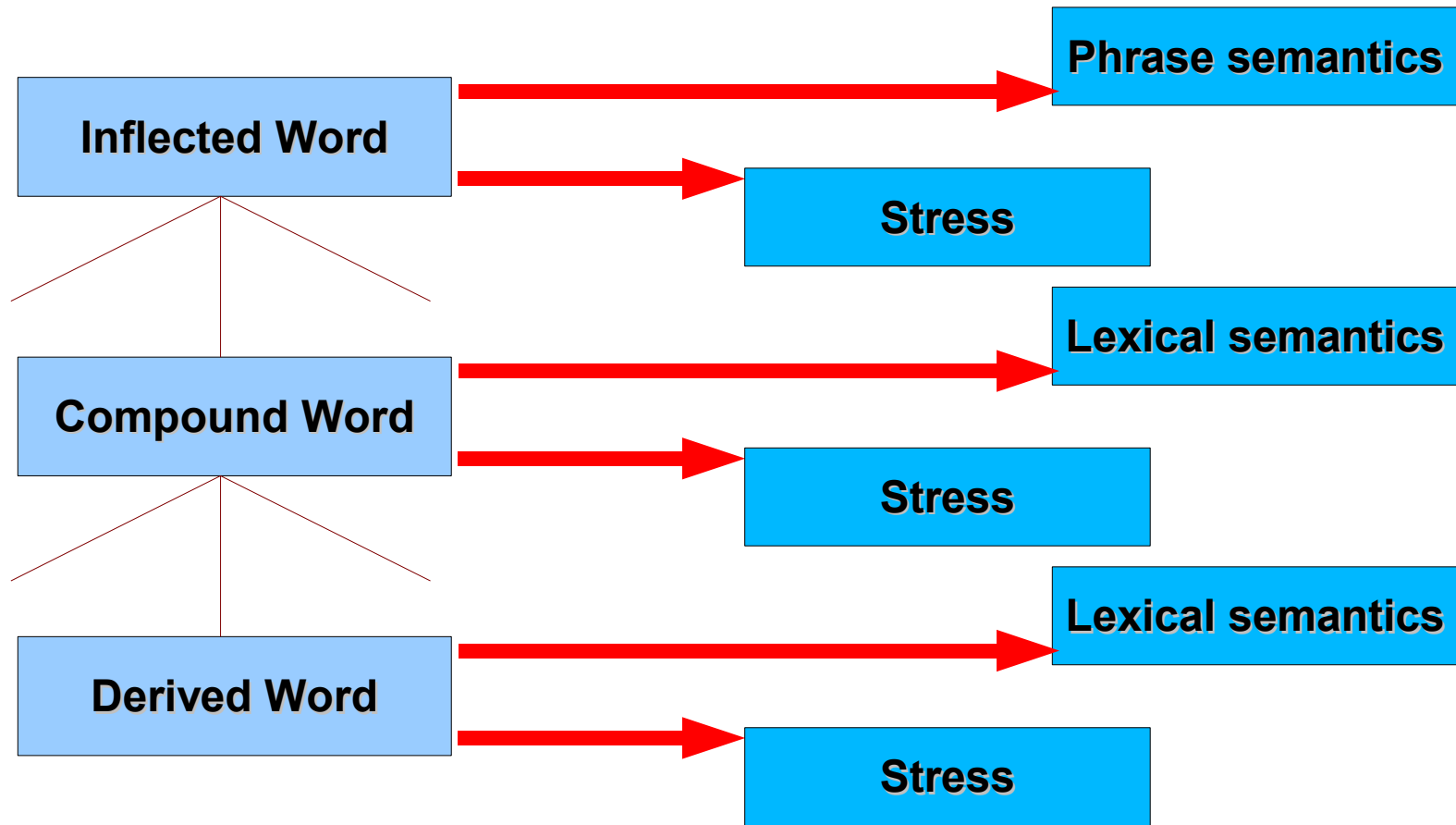
Remember: words as signs



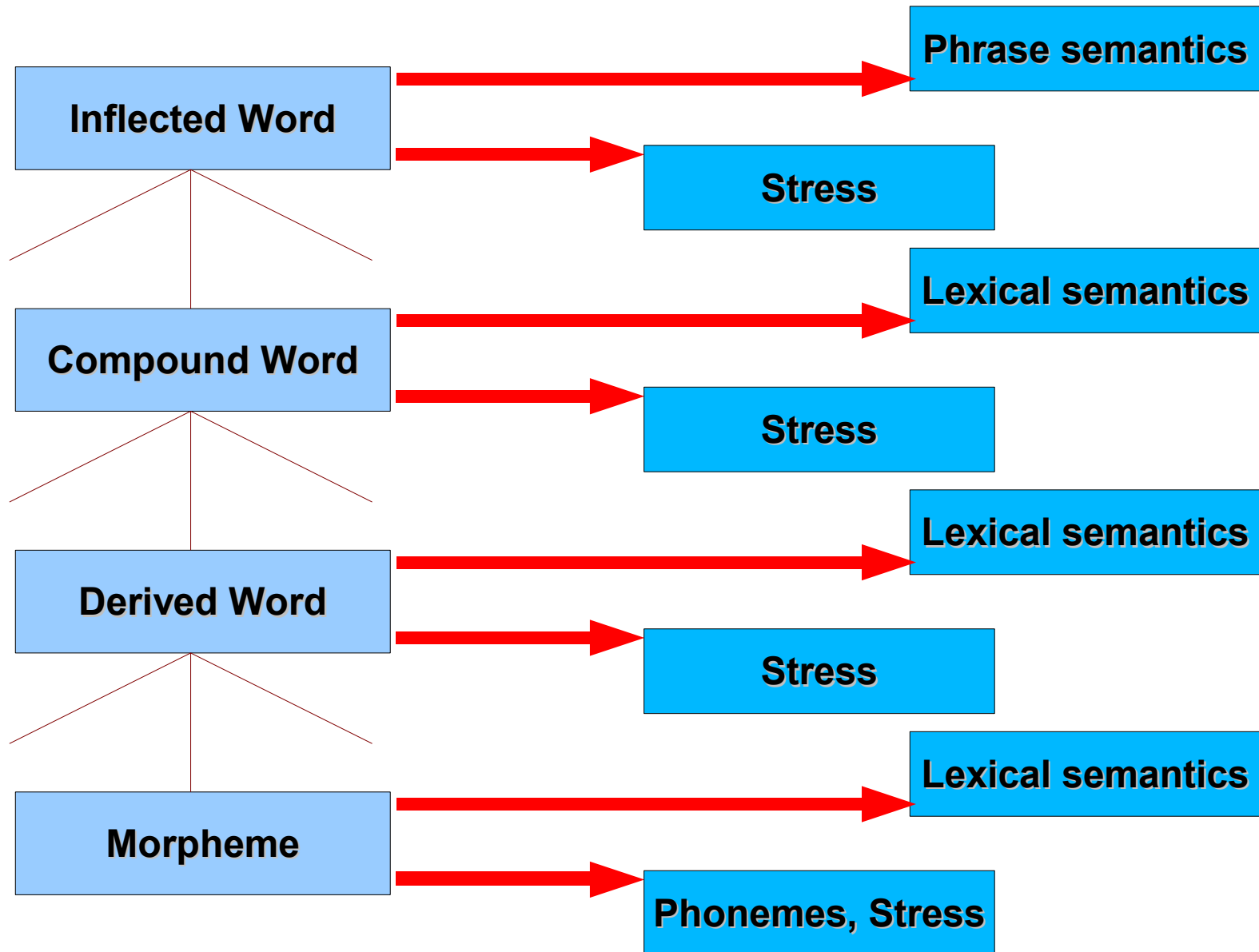
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Remember: words as signs



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More precisely ...

A word is

a stem + an inflection

An inflection (in English) is
a suffix or an *ablaut*

More precisely ...

A stem is either:

a root (lexical morpheme)

or

a derived stem

i.e. stem + affix (derivation)

or

a compound stem

stem + stem (compounding)

and nothing else is a stem.

More precisely ...

A derived stem is

either

- a root (zero derivation)

or

- a derived stem with an affix

Nothing else is a derived stem

More precisely ...

A compound stem is

a derived stem or a word +
a derived stem or a word

or

a compound stem +
a compound stem

Nothing else is a compound stem

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a derived stem or a word +
a derived stem or a word

or

a compound stem +
a compound stem

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Some simplex and complex words

- Some examples

- simplex:

- oh, ah, eh, oo, I, err, owe, ewe
 - pa, ma, far, car, star

- complex:

- blends, abbreviations (simplex roots based on more than one stem):
 - brunch, ... ; NATO, ...
 - derivations (based on one root):
 - unable, impossible, happiness, antidisestablishmentarianism
 - temerity, antidisestablishmentarianism
 - compounds (based on more than one root/stem):
 - *tatpuruṣa* (endocentric): jam-jar, honeypot, harddisk, bus-stop, ...
 - *dvandva* (bicentric): whisky-soda, gentleman-farmer, ...
 - *bahavrihi* (exocentric): red-head, redskin, blue-stocking, ...

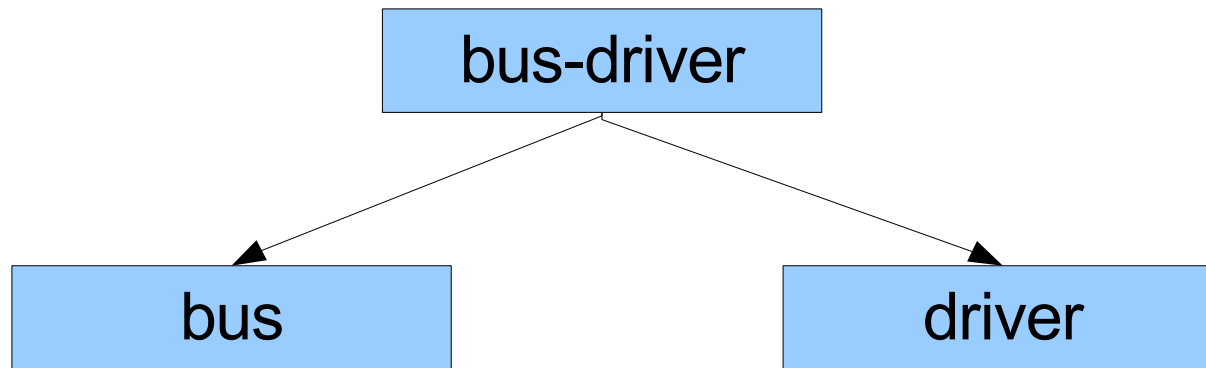
Task for Sherlock Holmes types

- What is Sanskrit?
- Who was Panini?
- What are the original meanings of these terms? -
 - tatpuruṣa
 - dvandva
 - bahuvrīhi

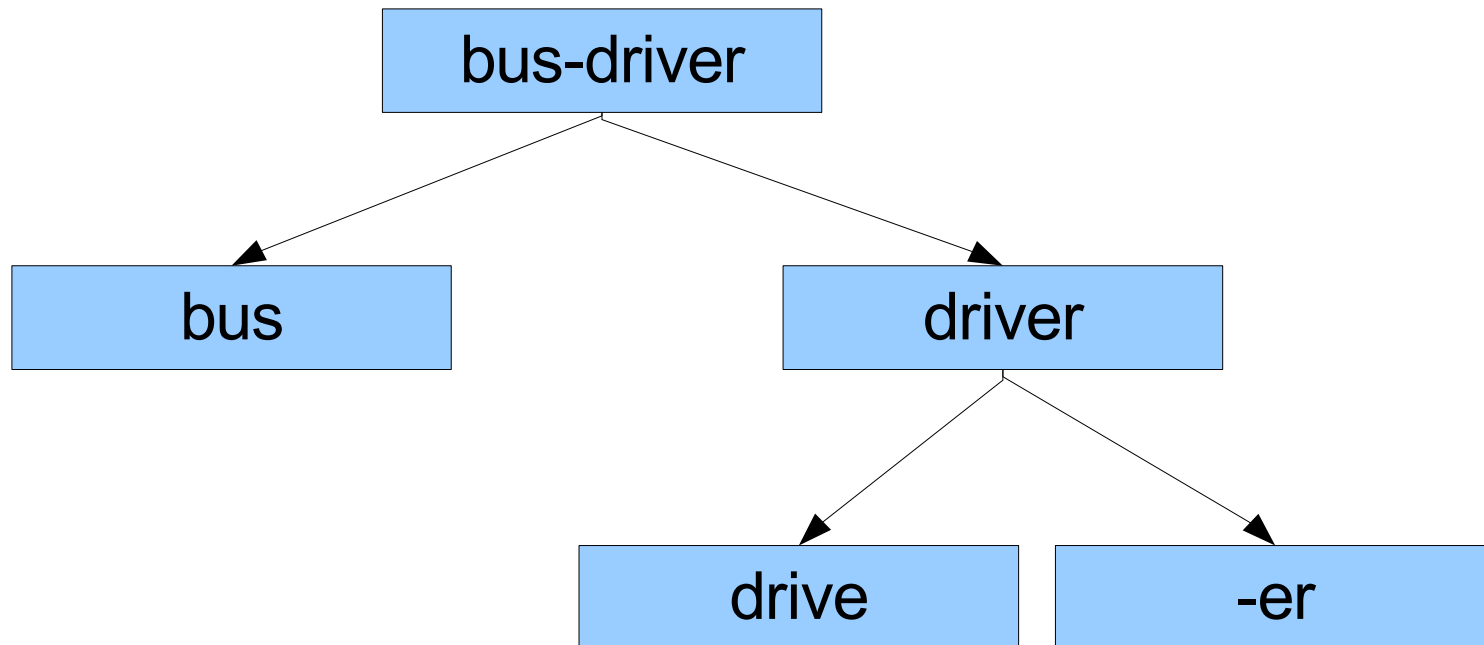
Summary: internal structure of words

bus-driver

Internal structure of words



Internal structure of words



Homework

- Define
 - morpheme
 - lexical morpheme
 - grammatical morpheme
 - stem
 - derived stem / compound stem
- What is the difference between
 - *inflection* and *word formation*?
 - *derivation* and *compounding* (and other forms of word formation)?
- Collect 5 longish words and
 - divide them into morphemes
 - show construction of a word from their stems as tree diagrammes
- Translate *Jabberwocky* into your favourite other language!

