EBERHARD KARLS
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Faculty of Philosophy
General Linguistics

Syntax & Semantics WiSe 2020/2021

Lecture 2: Basic Concepts I

12/11/2020, Christian Bentz

Overview

Section 1: Recap of Lecture 1

Section 2: Constituency
- Definition

Section 3: Constituency Tests
- Substitution
- Pronominalization
- Question Formation
- Permutation
- Fronting
- Coordination
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Section 4: Parts of Speech (POS)
- Definition
- Determining POS

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Section 1: Recap of Lecture 1

Form and Meaning

> "Every linguistic expression we utter has a meaning. We are therefore dealing with what has been referred to as form-meaning pairs (de Saussure 1916b). A word such as *tree* in its specific orthographical form or in its corresponding phonetic representation is assigned the meaning *tree'* [read: "tree prime"]. Larger linguistic units can be built up out of smaller ones: words can be joined together to form phrases and these in turn can form sentences."

Müller (2019). Grammatical theory, p. 3.

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Notational Format

German (deu, Indo-European)[1]

(1)

phonemic:	/baʊm/
orthography:	Baum
glossing:	tree.NOM.SG[2]
part-of-speech:	NOUN[3]
translation:	“tree”
meaning:	*tree′*[4]

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[1] The language name is given with the ISO-639-3 code and the language family according to Glottolog (https://glottolog.org/).

[2] see Leipzig glossing rules at https://www.eva.mpg.de/lingua/resources/glossing-rules.php.

[3] Part-Of-Speech. The exact denotations e.g. *NOUN* vs. just *N* can vary according to the syntactic framework. In this lecture I use the POS tags of the Universal Dependencies Project, see https://universaldependencies.org/u/pos/index.html.

[4] Following Müllers’ notation.

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Combinatoriality in Semantics

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(2)

Kim	sieh-t	ein-en	groß-en
kim	see\-PRS.3SG	DET.INDF-ACC.SG	big-ACC.SG
Baum			
tree.ACC.SG			

“Kim sees a big tree”

$\exists x[\text{TREE}(x) \wedge \text{SEE}(k,x)]$[5]

In the example above, the meaning of the overall sentence arguably derives as a *combination* of the meanings of the individiual parts. Importantly, this is not always the case...

[5]This is predicate logic notation as used in the semantics part of this lecture series.

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Combinatoriality in Syntax

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(3) Kim sieht einen großen Baum
[PROPN [VERB [DET [ADJ NOUN]]]]
“Kim sees a big tree”

In the example above, the elements of the sentence which combine to larger phrases (e.g. adjective and noun, determiner and noun phrase, etc.) are *adjacent* to one another. However, this is not always the case...

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The Elements of Combinations

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(4) Kim sieh-t ein-en groß-en
kim see\-PRS.3SG DET.INDF-ACC.SG big-ACC.SG
Baum.
tree.ACC.SG
[PROPN [VERB [DET [ADJ NOUN]]]]
“Kim sees a big tree.”

In the example above, **the elements** of the sentence which **combine to larger phrases** (e.g. adjective and noun, determiner and noun phrase, etc.) are *adjacent* to one another.

How do we know which elements combine?

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Section 2: Constituency

Definition: Constituents

Both the **basic elements/units** of a sentence – often orthographic words – as well as **combinations of those**, i.e. **phrases**, count as constituents.

Most basic constituents:
[Kim] [sees] [a] [big] [tree]

Higher level constituents:
[big[tree]], [a[big[tree]]], etc.

Müller (2019). Grammatical theory, p. 7.

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Interlude: Wordhood

What is a word anyways?

> *The general distinction between morphology and syntax is widely taken for granted, but it crucially depends on a cross-linguistically valid concept of '(morphosyntactic) word'. I show that there are no good criteria for defining such a concept. I examine ten criteria in some detail [...] and I show that none of them is necessary and sufficient on its own, and no combination of them gives a definition of 'word' that accords with linguists' orthographic practice.*

Haspelmath (2011). The indeterminacy of word segmentation and the nature of morphology and syntax, p. 31.

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Word Criterion: Free Occurrence

"Bloomfield (1933: 160) called utterance segments that can occur on their own **free forms**, and he famously defined the word as "a free form which does not consist entirely of (two or more) lesser free forms; in brief, a word is a minimum free form"."

Haspelmath (2011), p. 39 citing Bloomfield (1933).

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Example

(5) Where are you? - *Here*.
What do you need? - *Money*.

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Word Criterion: Free Occurrence

"But this definition does not single out forms that correspond to our intuition of grammatical words. On the one hand, it is too strict, because by this definition compounds [...] would not be words, but phrases, because they have constituents that are themselves free forms. On the other hand, it is much too loose, because many phrases [...] would count as words [...]"

Haspelmath (2011), p. 39-40.

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Example

(6) *firewater* (two separate free forms): fire water

(7) *the flower* (one single free form): *the

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Table 1. Nine studies that examine wordhood using test batteries

	Zwicky & Pullum 1983	Kanerva 1987	Bresnan & Mchombo 1995	Ackema & LeSourd 1997	Monachesi 1999	Harris 2000	Milićević 2005	Lieber & Scalise 2006	Bickel et al. 2007
Free occurrence				+			+		
External mobility and internal fixedness	+			+	+	+			
Uninterruptibility				+					+
Non-selectivity	+	+			+	+	+		+
Non-coordinatability			+	+	+		+	+	+
Anaphoric islandhood			+					+	
Nonextractability			+					+	
Morphophonological idiosyncrasies	+	+			+	+	+		
Deviations from biuniqueness									+

Haspelmath (2011), p. 60.

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Back to Constituency

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tree
NOUN

big [tree]
ADJ [NOUN]

a [big [tree]]
DET [ADJ [NOUN]]

sees [a [big [tree]]]
VERB [DET [ADJ [NOUN]]]

Kim [sees [a [big [tree]]]]
PROPN [VERB [DET [ADJ [NOUN]]]]

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But why not:

sees
VERB

[sees] a
[VERB] DET

[[sees] a] big
[[VERB] DET] ADJ

[[[sees] a] big] tree
[[[VERB] DET] ADJ] NOUN

[Kim [[[sees a] big] tree]]
[PROPN [[[VERB DET] ADJ] NOUN]]

?

How do we know which elements combine?

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Section 3: Constituency Tests

Substitution Test

"If it is possible to replace a sequence of words in a sentence with a different sequence of words and the acceptability of the sentence remains unaffected, then this constitutes evidence for the fact that each sequence of words forms a constituent."

Müller (2019). Grammatical theory, p. 7.

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Example:

(8) he knows [the man]
he knows [a woman]

Problem:

(9) he [knows the] man
he [sees a] man

Does this mean that "[knows the]" and "[sees a]" are constituents?

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Pronominalization Test

"Everything that can be replaced by a pronoun forms a constituent."

Müller (2019). Grammatical theory, p. 8.

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(10) Peter versucht, [das Buch zu lesen].
Peter tries the book to read
"Peter is trying to read the book."

(11) Klaus versucht **das** auch.
Klaus tries **that** also
"Klaus is trying to do that as well."

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Question Formation Test

"A sequence of words that can be elicited by a question forms a constituent."

Müller (2019). Grammatical theory, p. 9.

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Example: Spanish (spa, Indo-European)

(12) [La mujer] trabaj-a.
the woman work-PRS.3SG
"The woman works."

(13) **Quién** trabaj-a?
who work-PRS.3SG
"Who works?"

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Permutation Test

"If a sequence of words can be moved without adversely affecting the acceptability of the sentence in which it occurs, then this is an indication that this word sequence forms a constituent."

Müller (2019). Grammatical theory, p. 9.

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Example:

(14) dass keiner [dieses Kind] kennt
that nobody this child knows

(15) dass [dieses Kind] keiner kennt
that this child nobody knows
"that nobody knows this child"

Problem 1: Look at the English glossing. The equivalent permutations in English are ungrammatical. Hence, this test only works if word order is flexible.

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Permutation Test

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Problem 2: Latin (lat, Indo-European)

(16) nemo cognosc-it hunc puer-um
nobody know-PRS.3SG this.ACC.SG child-ACC.SG
"Nobody knows this child."

(17) nemo hunc puerum cognoscit
hunc cognoscit nemo puerum
hunc puerum cognoscit nemo
etc.

Question: do languages that *freely permute words* not have constituents beyond the most basic level (i.e. words)?

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Fronting Test

"The possibility for a sequence of words to be fronted (that is to occur in front of the finite verb) is a strong indicator of constituent status."

Müller (2019). Grammatical theory, p. 10.

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Example: Icelandic V2 (Verb Second) Order (isl, Indo-European)

(18) Bo **har** ikke læst [denne bog].
Bo has not read this book

(19) [Denne bog] **har** Bo ikke læst.
this book has Bo not read

Adopted from Thráinsson (2007). The syntax of Icelandic, p. 42.

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Coordination

"If two sequences of words can be conjoined then this suggests that each sequence forms a constituent."

Müller (2019). Grammatical theory, p. 10.

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Example: French (fra, Indo-European)

(20) [la femme] et [l'homme] travaill-ent.
the woman and the=man work-PRS.3PL
"The woman and the man work."

Also works for whole phrases (e.g. infinitive constructions):

(21) Er hat versucht, [das Buch zu lesen] und [es dann unauffällig
he has tried the book to read and it then secretly
verschwinden zu lassen].
disappear to let
"He tried to read the book and then make it quietly disappear."

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Problems with Constituency Tests

> "It would be ideal if the tests presented here delivered clear-cut results in every case, as the empirical basis on which syntactic theories are built would thereby become much clearer. Unfortunately, this is not the case. There are in fact a number of problems with constituent tests, [...]"

Müller (2019). Grammatical theory, p. 11.

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Universality of Constituency (?)

> "Many discussions presume that constituency is an absolute universal, exhibited by all languages. But in fact constituency is just one method, used by a subset of languages, to express constructions which in other languages may be coded as dependencies of other kinds."

Evans & Levinson (2009), p. 440.

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Note:

- If we count "basic elements/units of a sentence" as constituents (see definition on slide 10), then constituency is trivially a universal.
- However, the criticism is leveled towards the universal existence of *higher level constituents*.

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Universality of Constituency (?)

Thalanyji (?, Pama-Nyungan(?))

(22) Kupuju-lu **kaparla-nha** yanga-lkin **wartirra-ku-nha**
child-ERG dog-ACC chase-PRES woman-DAT-ACC
"The child chases the woman's dog."

> "Note how possessive modifiers – coded by a special use of the dative case – additionally pick up the case of the noun they modify, as with the accusative -nha on "dog" and "woman-Dat" [...] It is this **case-tagging**, rather than **grouping of words into constituents**, which forms the basic organizational principle in many Australian languages."

Evans & Levinson (2009), p. 441.

Note however: We don't know what the different constituent tests above would say about the constituency of *kaparla-nha wartirra-ku-nha*. This is only possible with a detailed knowledge of how the language is used.

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Section 4: Parts of Speech (POS)

Definition

Parts of Speech are classes of words that each lexical item is assigned to according to its *morphosyntactic* properties. According to Müller (2019: 18) the basic POS are *Verb*, *Noun*, *Adjective*, *Adverb*, *Prepositions*.

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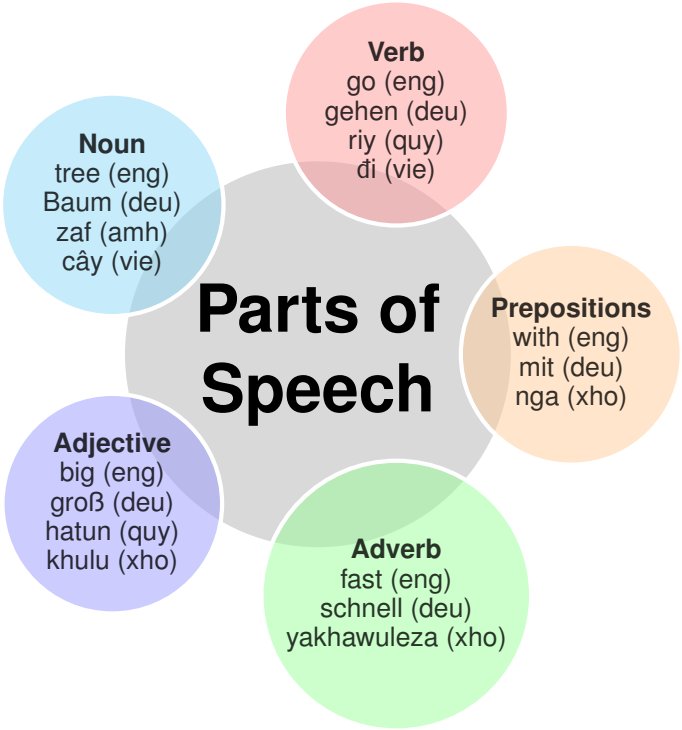

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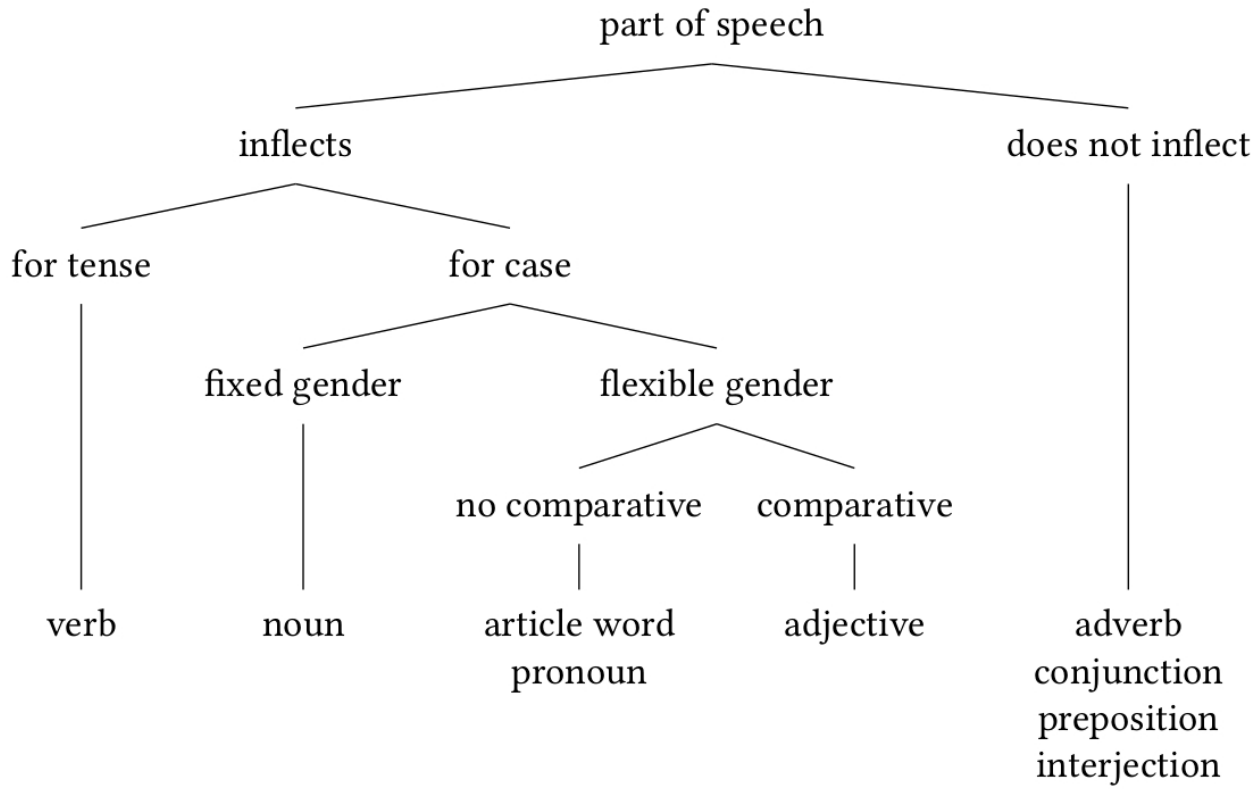
Decision Tree



Müller (2019). Grammatical theory, p. 24.
Based on Duden Grammar by Eisenberg et al. (2005).

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Example: Determining POS

(23) Das ist ein **schön-er** Baum
This is a beautiful-M.NOM.SG tree-M.NOM.SG
"This is a beautiful tree."

(24) Ich seh-e ein-en **schön-en** Baum
I see-1SG DET-M.ACC.SG beautiful-M.ACC.SG tree
"I see a beautiful tree."

(25) Das ist ein-e **schön-e** Blume
This is DET-F.NOM.SG beautiful-F.NOM.SG flower-F.NOM.SG
"This is a beautiful flower."

(26) Der Baum ist **schön-er** als die Blume
The tree is beautiful-more than the flower
"The tree is more beautiful than the flower."

POS inference:
"schön" → inflects → for case (i.e. (23) vs. (24)) → has flexible gender (i.e., (24) vs. (25)) → has a comparative form (i.e. (26)) → adjective
Beware: nouns have fixed grammatical gender (e.g. Baum (M), Blume (F)), but additional morphology might reflect biological gender (e.g. Student (M), Student-in (F)).

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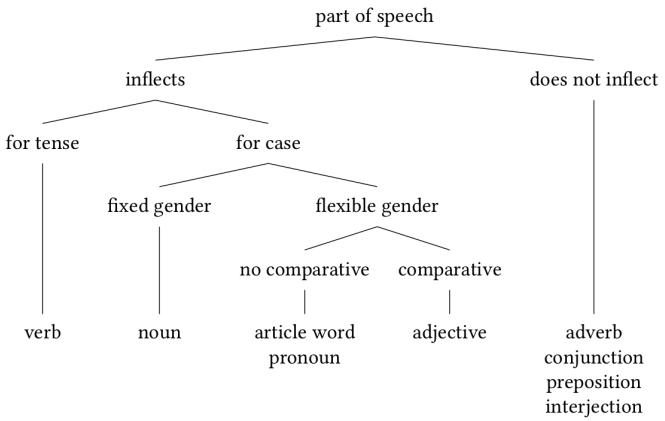
Example: Determining POS

Modern Hebrew (heb, Afro-Asiatic)

(27) **d**i**b**á**r**ti
speak.M.PRF.1SG
“I spoke.”

(28) ani me**d**a**b**e**r**
I speak.M.PRS
“I speak.”

(29) a**d**a**b**e**r**
speak.FUT.1SG
“I will speak.”



POS inference:
Words built on root template **dbr** (in this particular example) → inflect → for tense → verb
Beware: do**b**e**r** (m.) → “speaker” (one who speaks) → noun

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Universality of Word Classes (POS)

> "Now it has often been assumed that, across all languages, the major classes – those that are essentially unlimited in their membership – will always be the same "big four": nouns, verbs, adjectives, and adverbs. But we now know that this is untenable when we consider the cross-linguistic evidence."

Evans & Levinson (2009), p. 434.

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Controversy: languages without adjectives?

> "Are there adjectives in Mandarin Chinese? Most grammarians who dealt with the question of word classes or 'parts of speech' in Mandarin [...] tended to answer this question affirmatively. Their common practice was to apply the notional 'definitions' of word classes prevailing at that time in Western linguistics to the Chinese lexicon and to identify adjectives as words that 'denote properties'.
>
> [...]
>
> On the other hand, in more modern, structuralist-orientated approaches it has been widely agreed that those words which were traditionally called "adjectives" on semantic grounds, turned out to be, at most, a subclass of verbs, if their complex morphosyntactic behaviour was taken as a yardstick. It is this view which is taken by Chao (1968) and Li & Thompson (1981, 1990)."

Sackmann (1996). The problem of 'Adjectives' in Mandarin Chinese, p. 258.

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Controversy: languages without adjectives?

> "It is widely agreed in linguistics that the supreme criterion for identifying verbs is *predicativity*. In Mandarin, 'adjectives' are able to form predicates in exactly the same way as verbs do. In predicative use, neither 'adjectives' nor verbs require, or even allow for, the use of a copula verb [...]"

Sackmann (1996), p. 261.

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Mandarin Chinese (cmn, Sino-Tibetan)

(30) zhèige xuéshēng niàn huàxué
this student study chemistry
"This student studies chemistry."

(31) zhèige xuéshēng [hěn] nǔlì
this student [very] diligent
"This student **is** diligent."

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Controversy: languages without adjectives?

> "In Mandarin, both verbs and 'adjectives' can be marked for aspectual categories, either by aspectual suffixes like *-le* (perfective), *-guo* (experiential), and *-zhe* (durative), or by 'reduplication' ('delimitative'). (I tentatively adopt the position of regarding aspectual markers as (morphological) suffixes rather than (syntactic) particles. [...]"

Sackmann (1996), p. 262.

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Mandarin Chinese (cmn, Sino-Tibetan)

(32) zhèige xuéshēng shuì-**le** [...]
this student sleep-**PERF** [...]
"This student has slept [...]."

(33) zhèige xuéshēng nǔlì-**le** [...]
this student diligent-**PERF** [...]
"This student has been diligent [...]."

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Mandarin Chinese ‘adjectives’

Note: If we accept -le as a suffix marking perfective aspect, then we would class *nǔlì-**le*** “diligient-PERF” as verb on the decision tree, since it inflects for tense/aspect.

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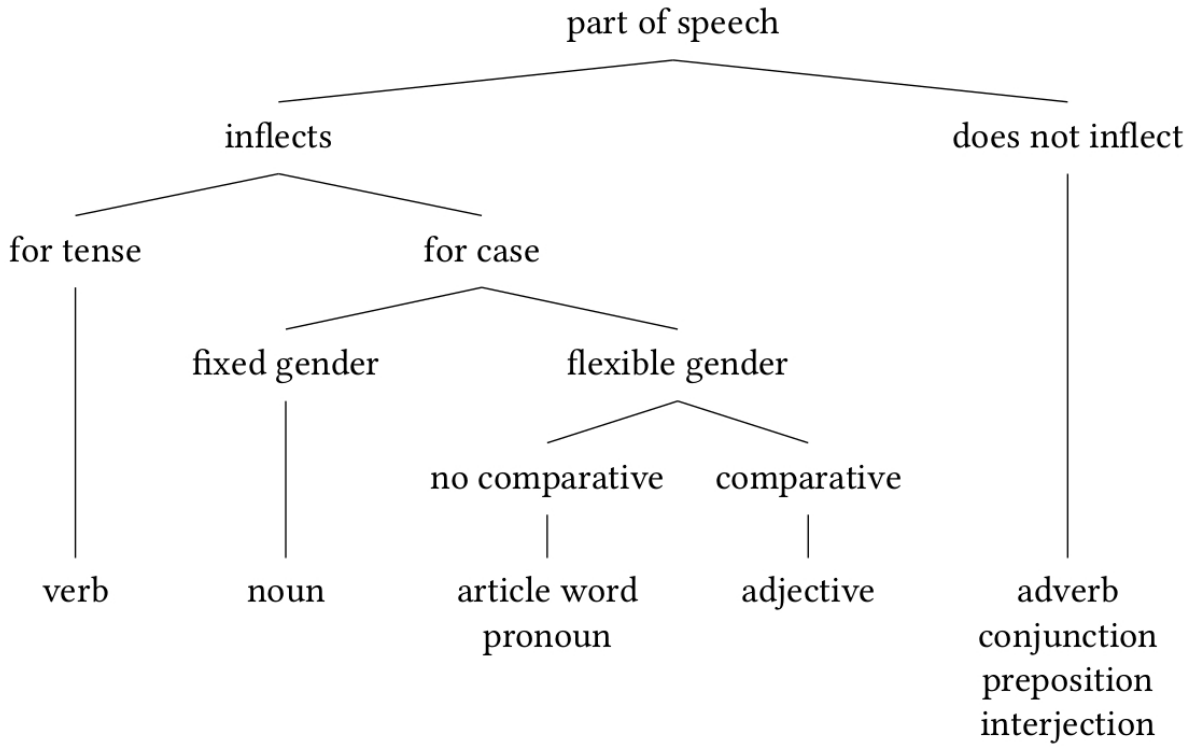

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Controversy: Noun-Verb distinction

> "The question of whether there is a distinction between *noun* and *verb* as lexical categories in Salish has long been a lively issue. [...] All words are *predicates*: a root plus its internal arguments, if any."

Jelinek (1995), p. 177-179.

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Straits Salish (str, Salishan)

(34) sweyqe' cə t'ilem
man-3A[6] DET sing
"The (one who) is singing is a man."

(35) t'ilem cə sweyqe'
sing-3A DET man
"The (one who) is a man is singing."

[6] A: agent-like argument (according to Leipzig Glossing Rules).

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Summary: Problems with POS

- **Problem 1**: The number of basic POS can differ according to the framework any particular researcher adheres to (e.g. Interjection, Conjunction, etc. might be seen as additional POS).
- **Problem 2**: It is controversial whether all languages even have the basic POS mentioned above.
- **Problem 3**: The abbreviations used for POS can also differ across frameworks.
- **Problem 4**: Isolating languages have very little or no inflections. According the the Decision Tree all words in these languages would be in the class of adverbs, conjunctions, etc.

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Thank You.

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