EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN

Faculty of Philosophy
General Linguistics

Syntax & Semantics WiSe 2020/2021

Lecture 20: Syntax Summary

28/01/2021, Christian Bentz

Overview

Organization

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General Linguistics

Exam Registration

Exam Registration on ALMA

- Exam registration closes on **8 February 2021**.
- Make sure to sign up **first for the seminar** (i.e. exam), you will then be automatically signed up for the tutorial as well.
- If you have signed up for the tutorial first and are then not able to sign up for seminar anymore, just sign out of the tutorial and sign in to the seminar.
- If you experience further issues with ALMA, you need to contact the “Prüfungsamt”.

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Exam

Exam

- This years' exam will take place on **25th February from 14:00 to 16:30** (i.e. in the lecture slot).
- It will be held **online on moodle**.
- You will be able to start between **14:00 and 14:30**. From the point you log in onwards you will have **exactly 2 hours**.

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Tutorial Week 9 (Next Week)

Tutorial Week 9 (Next Week)

- You will discuss the mock exam in next weeks' tutorials (Week 9).
- Since the monday and tuesday tutorials are before the exam, I would ask students in these tutorials to **either** join the tutorials later in the week (for once), **or** to discuss the exam in the monday and tuesday tutorials in Week 10.

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Basic Concepts

Basic Concepts

- **Constituency** (Lecture 2)
- **Parts of Speech** (Lecture 2)
- **Headedness** (Lecture 3)
- **Valency** (Lecture 3)
- **Grammatical Functions** (Lecture 3)

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.

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.

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).

Example

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

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.

Example

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

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

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.

Tests for Constituency

- **Substitution Test**
  he knows [the man] → he knows [a woman] ✓
- **Pronominalization Test**
  he knows [the man] → he knows [him] ✓
- **Question Formation Test**
  Whom does he know? – [The man]. ✓
- **Permutation Test**
  he knows [the man] → [the man] he knows ✓
  he knows [the man] → he [the man] knows x
- **Fronting Test**
  he knows [the man] → [the man] he knows ✓
- **Coordination Test**
  he knows [the man] → he knows [the man] and [the woman] ✓

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.

Universality of Constituency (?)

Thalanyji (?, Pama-Nyungan(?))

(4) 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."

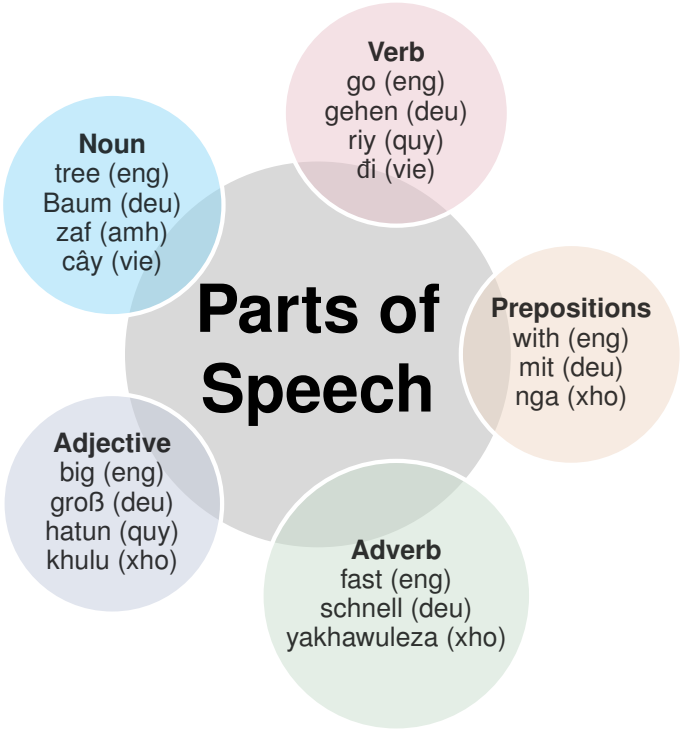
> "Note how possessive modifiers – coded by a special use of the dative case – additionally pick up the case of the noun they modify, as with the accusative -nha on "dog" and "woman-Dat" [...] It is this **case-tagging**, rather than **grouping of words into constituents**, which forms the basic organizational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

Evans & Levinson (2009), p. 441.

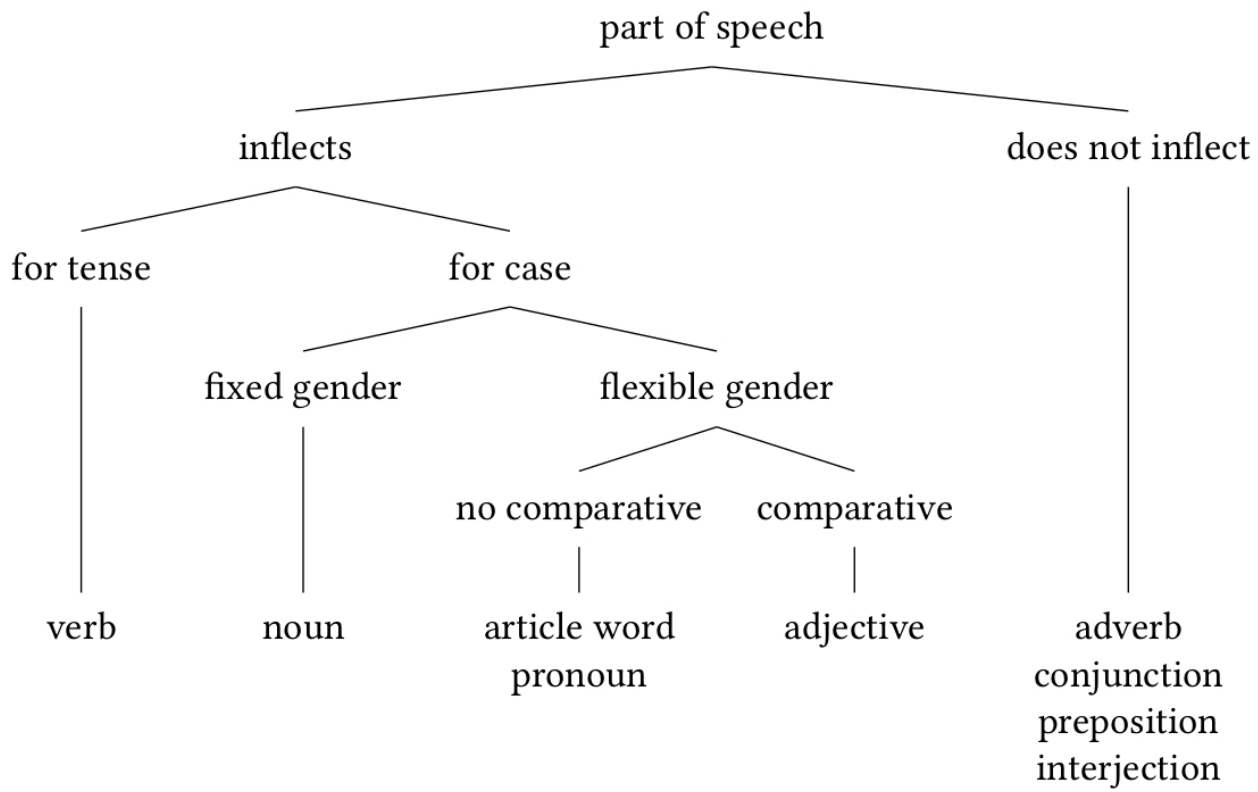
Note however: We don't know what the different constituent tests above would say about the constituency of *kaparla-nha wartirra-ku-nha*. This is only possible with a detailed knowledge of how the language is used.

Definition: Parts of Speech

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*.



Decision Tree



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

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.

Headedness

"The **head** of a constituent/phrase is the element which determines the *most important properties* of the constituent/phrase. At the same time, the head also determines the *composition of the phrase*. That is, the head requires certain other elements to be present in the phrase."

Müller (2019). Grammatical theory, p. 28.

Examples:

(5) This man *dreams* in his sleep.
(6) this *man*
(7) *in* his sleep
(8) his *sleep*

The heads are here indicated in *italics*.

Overview: Heads and Phrase Types

Example	Head	Phrase Type
she **knows** the man	knows (V)	VP
he is **smart**	smart (A)	AP
smart **woman**	woman (N)	NP
the **woman**	woman (N)	NP
the man's **cat**	cat (N)	NP
very **beautiful**	beautiful (A)	AP
very **quickly**	quickly (Adv)	AdvP
in the library	in (P)	PP

Valency according to Tesnière

> *"Nous avons vu qu'il y avait des verbes sans actant, des verbes à un actant, des verbes à deux actants et des verbes à trois actants."*
>
> *Tesnière (1959). Éléments de syntaxe structurale, p. 238.*

Verb	V	V	V	V
Arguments	_	A	A A	A A A
Sentence Type:	impersonal sentence	intransitive sentence	transitive sentence	ditransitive sentence
Valency:	avalent (0)	monovalent (1), one-place predicate	bivalent (2), two-place predicate	trivalent (3), three-place predicate

Note: Müller states that the pronouns in expletives (e.g. *it rains*) should be considered obligatory arguments of the verb, while Tesnière explicitely calls them "sans actant".

Grammatical Functions: Subject and Object

"In some theories, grammatical functions such as **subject** and **object** form part of the formal description of language (see Chapter 7 on Lexical Functional Grammar, for example). [...] it is by no means a trivial matter to arrive at a definition of the word subject which can be used cross-linguistically."

Müller (2019). Grammatical theory, p. 35.

Grammatical Functions: Subject

The following syntactic properties defining a subject are cited by Müller:

- agreement of the finite verb with it
- nominative case in non-copular clauses
- omitted in infinitival clauses
- optional in imperatives

Müller (2019). Grammatical theory, p. 35.

Valency and Grammatical Functions

"If we can be clear about what we want to view as a subject, then the definition of *object* is no longer difficult: objects are all other arguments whose form is directly determined by a given head. [...] it is commonplace to talk of *direct objects* and *indirect objects*. The direct object gets its name from the fact that – unlike the indirect object – the referent of a direct object is directly affected by the action denoted by the verb."

Müller (2019), p. 38.

Verb	V	V	V	V
Arguments	_	A	A A	A A A
Gramm. Functions:	None or SUBJ	SUBJ	SUBJ, OBJ	SUBJ, DOBJ, IOBJ
Valency:	avalent (0)	monovalent (1)	bivalent (2)	trivalent (3)

Notation: DOBJ (direct object), IOBJ (indirect object)

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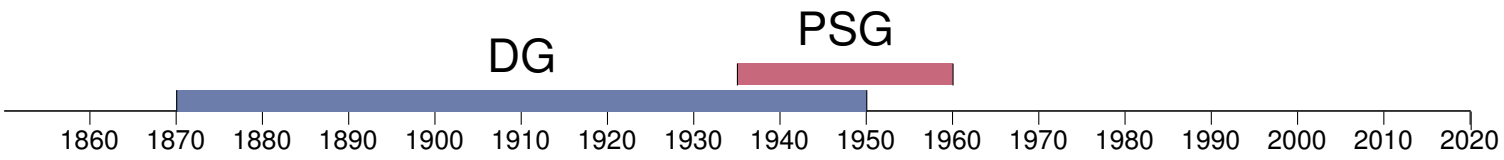
Syntactic Frameworks: Overview

Historical Perspective

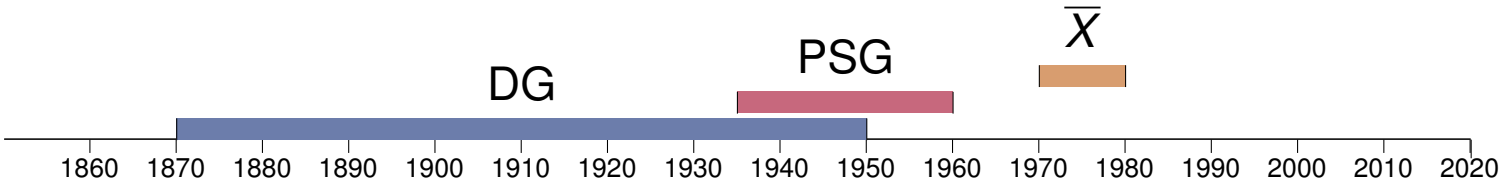
Most **basic syntactic concepts** (headedness, valency, POS, grammatical functions) were already relevant in **Dependency Grammar (DG)**.

Phrase Structure Grammar (PSG) added a strong constituency component via **re-write rules**. This also gave rise to **tree and bracket representations**.



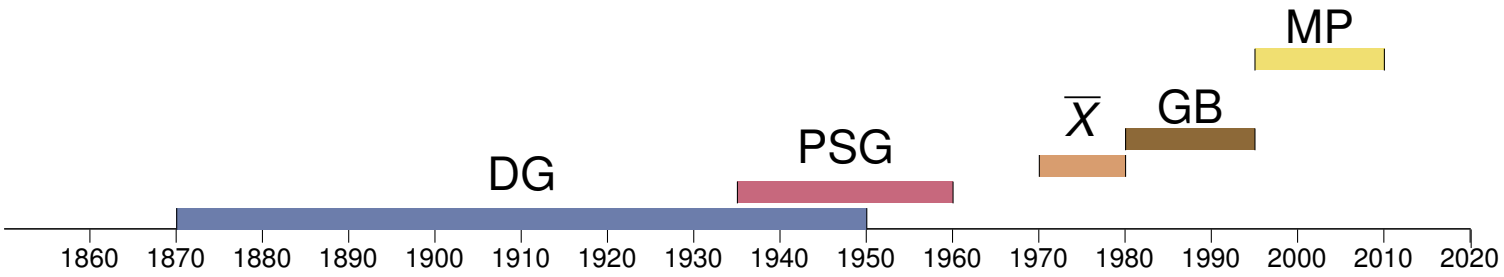
Historical Perspective

$\overline{X}$-Theory took PSGs to a **higher level of abstraction** by introducing $\overline{X}$-rules. Remember that the X is a variable representing all kinds of phrase types (AP, NP, PP, etc.)



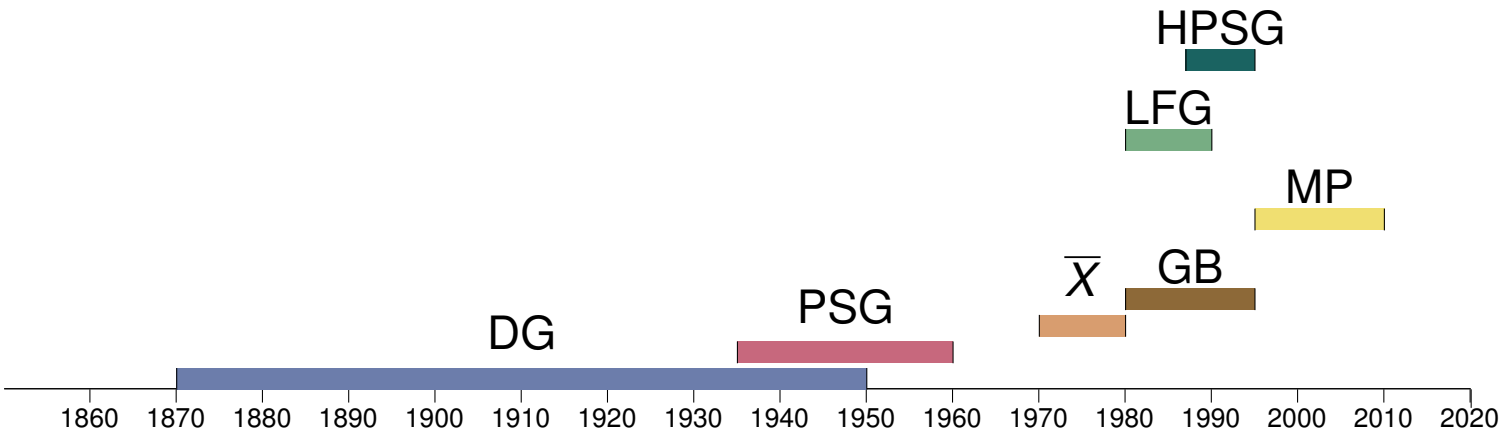
Historical Perspective

This tendency of further abstracting away from **surface structure** to understand **deep structure** was followed up on by **Government & Binding (GB)** and the **Minimalist Program (MP)**.



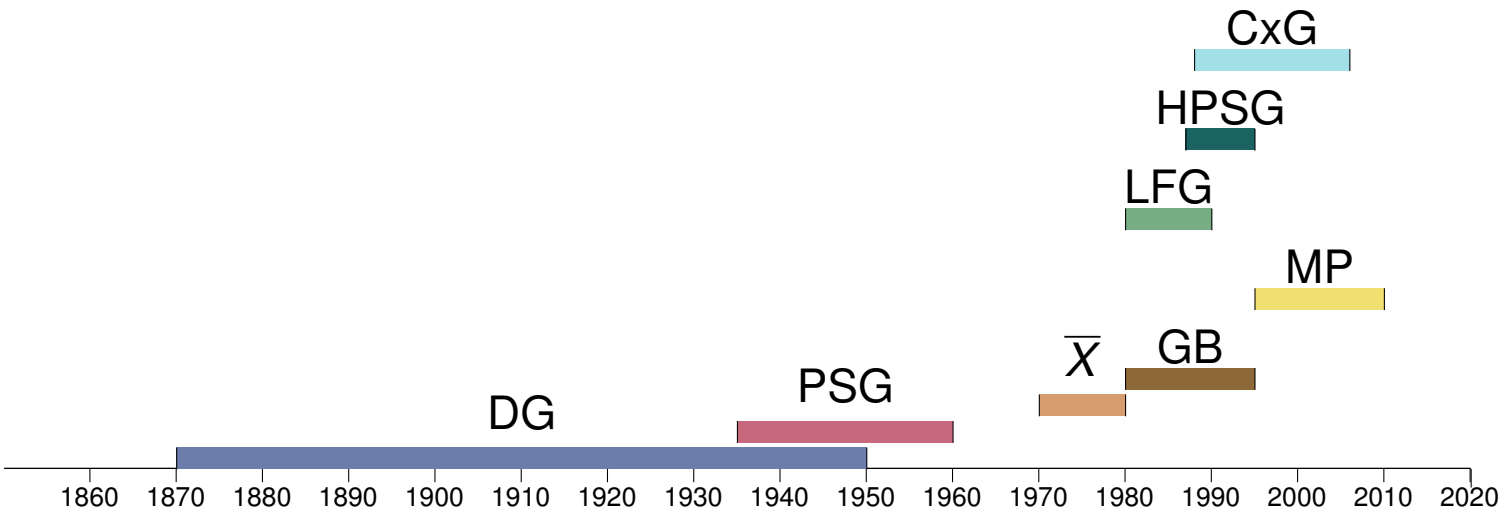
Historical Perspective

Lexical Functional Grammar (LFG) and **Head-Driven Phrase Structure Grammar (HPSG)**, on the other hand, rather focused on **lexicalization of syntactic structure** by introducing **feature descriptions in matrix form**. This also rendered tree/bracket notations rather marginal.

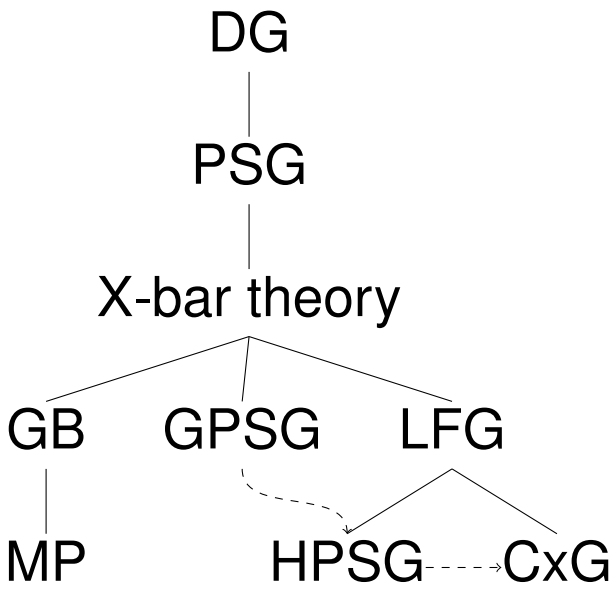


Historical Perspective

Construction Grammar breaks with a core concept of syntax, and promotes moving away from **compositionality** towards **holistic patterns**, i.e. constructions, which are learned and stored if sufficiently frequent.



Syntactic Framework Tree



DG: Dependency Grammar
PSG: Phrase Structure Grammar
GB: Government & Binding
GPSG: Generalized Phrase Structure Grammar
LFG: Lexical Functional Grammar
HPSG: Head-Driven Phrase Structure Grammar
CxG: Construction Grammar
MP: Minimalist Program

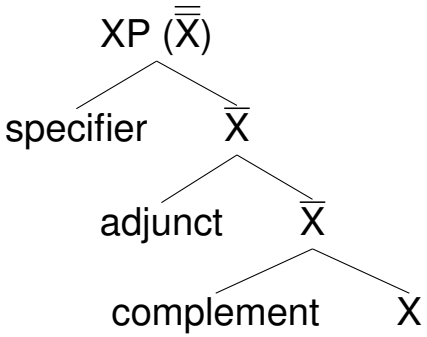
Basic Concepts in Syntactic Frameworks

	Const.	POS	Heads	Valency	Gram. Functions
DG	x	✓	✓	✓	✓
PSG	✓	✓	✓	✓	x
X-bar	✓	✓	✓	✓	✓
G&B	✓	✓	✓	✓	✓
MP	✓	✓	✓	✓	✓
LFG	✓	✓	✓	✓	✓
HPSG	✓	✓	✓	✓	✓
C&G	✓	✓	✓	x	✓

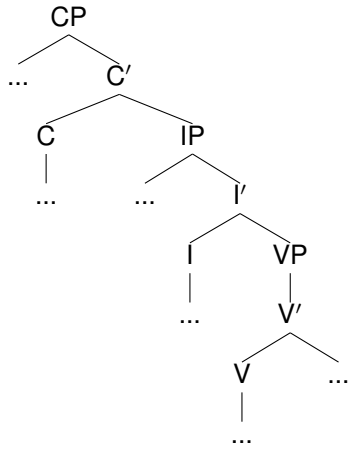
Transformational Frameworks

The core idea of **transformational frameworks** is that there is some **underlying template** (i.e. deep structure) which is adapted by transformations and movements to give rise to the full variety of sentence structures encountered in linguistic production (except for noise such as misspronunciations, etc.).

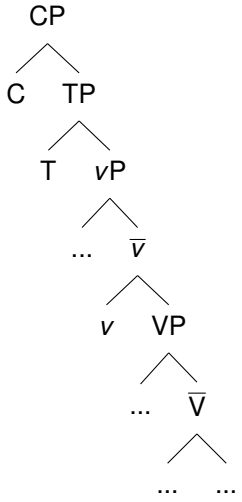
X-bar Theory



G&B



Minimalist Program



Constraint-Based Frameworks

The core idea of **constraint-based frameworks**[1] is to capture syntactic relationships by **structural frames** (e.g. feature matrices, constructions) which constrain how elements can be combined and slots are filled.

LFG

$$\begin{bmatrix} \text{PRED} & \text{'devour}\langle \text{SUBJ,OBJ} \rangle\text{'} \\ \text{TENSE} & \textit{past} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'david'} \end{bmatrix} \\ \text{OBJ} & \begin{bmatrix} \text{SPEC} & \text{a} \\ \text{PRED} & \text{'sandwich'} \end{bmatrix} \end{bmatrix}$$

HPSG

$$\begin{bmatrix} \textit{head-specifier-phrase} \\ \text{PHON} \langle \textit{Kim sleeps} \rangle \\ \textbf{SYNSEM|LOC|CAT} \begin{bmatrix} \textit{category} \\ \text{HEAD} & \boxed{1} \\ \text{SPR} & \langle \boxed{2} \rangle \\ \text{COMPS} & \langle\rangle \end{bmatrix} \\ \text{HEAD-DTR} \begin{bmatrix} ... \end{bmatrix} \\ \text{NON-HEAD-DTRS} \langle ... \rangle \end{bmatrix}$$

C&G

- **[N-s]** (regular plurals)
- send **<someone>** to the cleaners
- the **Xer** the **Yer**
- **Subj V Obj$_1$ Obj$_2$**

[1] Also sometimes called (maybe more correctly) *model theoretic*.

Thank You.

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