

LING 201: Introduction to Linguistics

EMU
Fall 2011
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Agenda

- Mid-term exam
- Syntax
- New assignments

Introduction

- What is syntax?
- Study of language, beyond the level of elementary phonological units, morphemes, words...
- but below the level of meaning and conceptual structure.
- Syntax is a branch of linguistics...
- What is syntax good for?

Introduction

- What is the difference between the following sentences?
- What is wrong with (1b)?
 - (1) a. *The cat chases the mouse.*
b. **Cat mouse the the chases.*

Introduction

- **Intuition:**
 - We seem to have some **intuition** about word order.
 - We could assign gradual well-formedness **scores** to sentences:
 - (2) a. *The cat chases the mouse.*
 - b. **Chases the cat the mouse.*
 - βc. **Cat mouse the the chases.*
- Why can we do that? How can we describe this intuition?

Formal properties of language

- Natural language utterances are a combination of basic units of language.
- **Finite set of words, morphemes, sounds**
- Rules and principles constrain the possible combinations, but allow for endless (number of) combinations.
- **Infinite set of utterances, combinations of the basic units**

Language and Mind

- Communication:
 - *Language production:*
Meaning → Language → Speech
 - *Language processing:*
Speech → Language → Meaning
- Breaking language down into domains and units:
 - to reduce its complexity

Language and Mind

- Breaking language down into domains and units:
 - **Speech:** acoustic, phonetic
 - **Language:** morphological, syntactic
 - **Meaning:** semantic, pragmatic
- External sense: acoustics, movements...
- Internal sense: grammar, structure, combinatorics, basic units...

Language and Mind

- Research issue:
 - Grammar and its properties
 - Grammar as a mental system: it is in the mind
- Modeling the mental state of “knowing a grammar/language”

Syntactic Analysis

- Research methods:
 - Observation → Generalization
 - Theory formulation (Hypotheses)
 - Testing and Falsification
 - Revision of theory and hypotheses (positive falsificationizm)
- Domain in syntax: Sentence
- Hypothesis: Sentences are made of syntactic constituents (the elementary units at the syntactic level).

Syntactic Analysis

- How do we find out about constituents and their inter-relations?
 - Maybe single words are constituents?
 - Maybe types (rather than concrete words) are constituents?
 - Maybe groups of words are constituents?
- Are there tests, or just intuitions?

(3) a. *The cat chases the mouse.*

Syntactic Analysis

- Testing structural properties:
 - Location and collocation:
 - Do some words always occur together?
 - Do some words always occur in a certain position?
 - Mutual exclusiveness
 - Are some words mutually exclusive in a certain position?
([example?](#))
 - Dependencies
 - Does one word depend on the occurrence of another word? ([example?](#))

Approaching Syntax

- Research methods: some tests for constituency
 - Replacement and Matching
 - Pronominalization
 - *Wh*-test (Question)
 - Elimination
 - Dislocation
 - Coordination
- These tests are **not proofs for constituency**, they are just **hints**.

Replacement Test

- What can be replaced in a sentence is probably a constituent.

John bought a book.

John bought some chocolate.

Mary bought a book.

- Observational hypotheses e.g.:
a book
some chocolate

Pronominalization Test

- What can be replaced by a pronoun in a sentence is probably a constituent.

John bought a book.

He bought a book.

John bought it.

- Observational hypotheses e.g.:

John

a book

Wh-Test

- What can be questioned (i.e. replaced by a *wh*-pronoun) in a sentence is probably a constituent.

John bought a book.

What did John buy?

Who bought a book?

- Observational hypotheses e.g.:

John

a book

Elimination Test

- What can be eliminated (or deleted) in a sentence is probably a constituent.

John bought a **new** book **yesterday**.

John bought a book **yesterday**.

John bought a **new** book.

- Observational hypotheses e.g.:

new

yesterday

Dislocation Test

- What can be dislocated in a sentence is probably a constituent.

John put all the new books on the table.

John put on the table all the new books.

- Observational hypotheses e.g.:

all the new books

on the table

Coordination Test

- What can be coordinated in a sentence is probably a constituent.

John and Mary bought a new house.

John slept in the car and Mary in the house.

- Observational hypotheses e.g.:

John slept in the car

Mary (slept) in the house

Constituent-test Pitfalls

- Tests for constituency vs. tests for constituents of the same type?

John loves *fish*.

John might *fish*.

- Constituent-tests are **tests** about **syntactic structure**, they do **not** tell us anything about the **type of constituents!**

Constituent-test Assumptions

- Tests for constituency with grammatical sentence pairs!
John bought a new book.
*John bought in a new bookstore.
- The notion of grammaticality:
 - Native-speaker judgments vs. prescriptive rules: here only
 - Explanatory: theory of the language faculty based on [native-speaker judgments](#), [introspection](#), and [psycho-linguistic research](#)
 - Prescriptive and descriptive: [selective judgments](#), and [descriptive linguistic analysis](#)

Grammaticality

- Explanatory approach:
 - **Answers** to: Why are some sentences grammatical and other not?

Mary is likely to win.
*Mary is possible to win.

You think John loves Mary.
You think that John loves Mary.

Who do you think loves Mary?
*Who do you think that loves Mary?
- not just **pure descriptions** of **good** and **bad** sentences (as in a descriptive approach).

Homework

- Homework assignment VI for the 31st of Oct.
- Reading: chapter 5 complete, Akmajian et. al!
- Exercise 1, End of chapter 5

Sentence structure

- **Clause:**
 - Simple clause
 - Complex clause
 - Embedding
 - Subordination

Sentence structure

- **Clause:**
 - Group of words (a syntactic constituent!)
 - Contains:
 - Subject (explicit or implicit)
 - Predicate

Sentence structure

- **Simple clause:**
 1. *John bought a car.*
 2. *to read a book*
- **Essential parts:**
 - Predicate: logical, traditional notion
 - Subject (Noun in 1.; implicit in 2.)
- **Implicit parts:**
 - Subject in 2.

Sentence structure

- **Predicate**
 - Consists of:
 - Verb + permitted/required/precluded other elements (e.g. objects, adverbs, predicates)
 - Provides information about the subject
 - Relation: Subject + Predicate = *Nexus*

Sentence structure

- Predicate
- Predicate Nominal
 - A noun phrase functions as the main predicate of the clause, in combination with a copula, e.g.:
John is a lawyer.

Sentence structure

- Predicate
- Predicate Adjective
 - An adjective functions as the main predicate in the clause, together with a copula, e.g.:

Syntax is interesting.

Sentence structure

- **Simple clause:**
 1. *John bought a car yesterday.*
 2. *John bought a car in London.*
 3. * *John bought in London.*
 4. * *Bought a car in London.*
 5. *John bought a car.*
 6. *to buy a car*

Sentence structure

- Simple clause:
 - Omitting required parts leads to *ungrammaticality*.
 - Thus, parts that can be omitted are *optional*.
- Optional parts are e.g.:
 - Temporal adverb in 1.
 - Locational preposition phrase in 2.

Sentence structure

- **Complex clause:**

John said that Mary bought a car.

[_s John said [_s that Mary bought a car]]

- **Contains:**

- Two predicates:

- **Matrix clause:** *John said* _

- **Embedded clause:** *that Mary bought a car*

Sentence structure

- Why is the structure better represented as:

[_S John said [_S that Mary bought a car]]

- and not as:

[_S John said] [_S that Mary bought a car]

?

Sentence structure

- The verb “say” selects/requires a complement clause:

[_S John said [_S that Mary bought a car]]

- And thus, the structural representation for:

John bought a book.

is?

Sentence structure

- The verb “*buy*” selects/requires a complement noun phrase as the direct object:

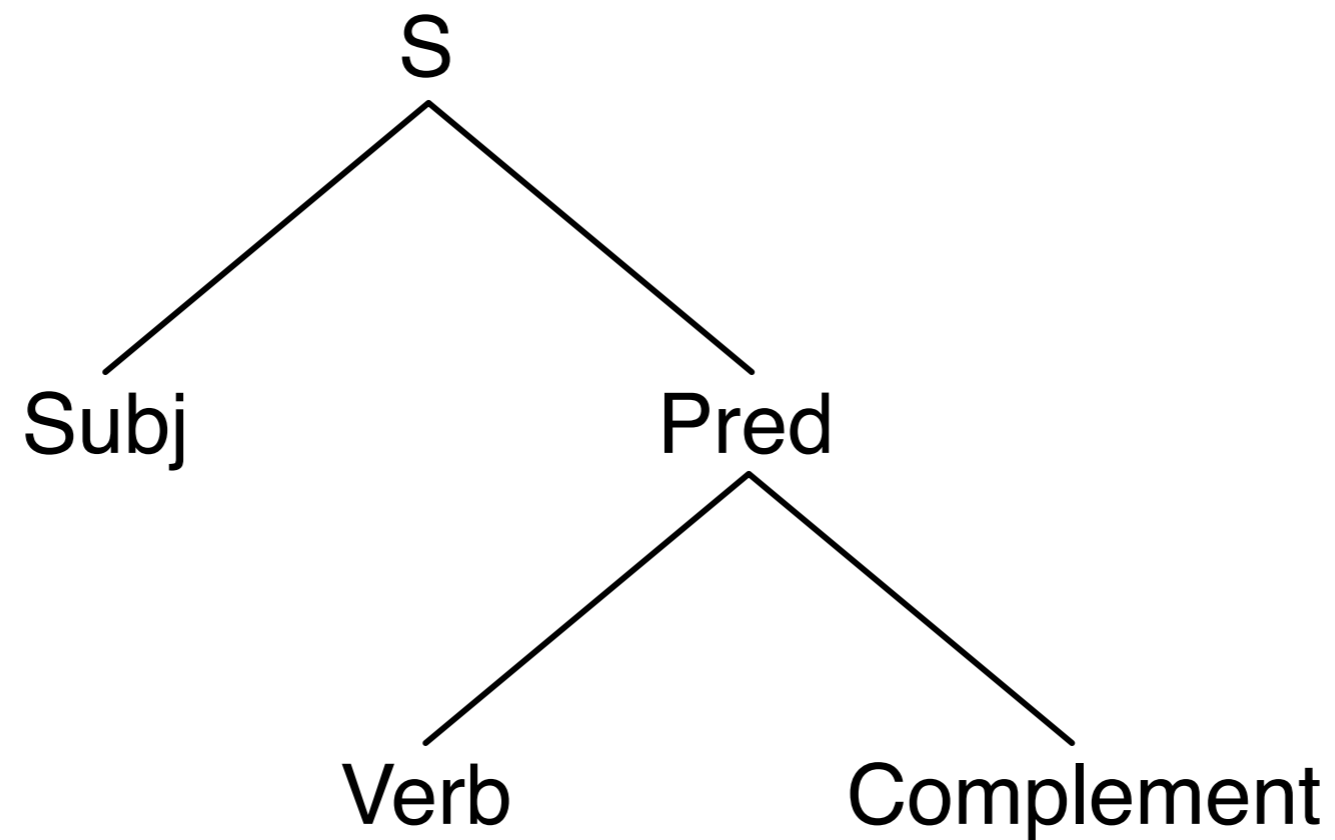
[S *John* [Pred *bought a book*]]

- and not:

[S *John* [Pred *bought*]] [*a book*]

[S *John* [Pred *bought*] [*a book*]]

Sentence structure



Sentence structure

- Predicates: *buy*

John bought something.

* *John bought.*

* *John bought yesterday.*

* *John bought in London.*

* *John bought that Mary has a car.*

Sentence structure

- Predicates: *buy*

John bought something.

John bought something yesterday.

*John bought something yesterday in
London.*

Sentence structure

- Predicates: *buy*
 - Requires a nominal complement as the direct object.
 - Allows for optional adverbial, or prepositional modifiers.
 - *buy* is a transitive verb.

Sentence structure

- Predicates: *dance*

John dances.

? *John dances a table.*

John dances a tango.

John dances in London/tomorrow.

* *John dances that Mary bought a car.*

Sentence structure

- **Predicates:** *dance*
 - Does **not require** any complement as the direct object.
 - Allows for **optional** nominal, adverbial, or prepositional modifiers.
 - *dance* is an **intransitive** verb.

Sentence structure

- **Predicates: *listen***

John listens to the radio.

* *John listens.*

* *John listens the radio.*

* *John listens in London/tomorrow.*

* *John listens that Mary bought a car.*

Sentence structure

- **Predicates: *listen***

John listens to the radio.

John listens to the radio tomorrow.

John listens to the radio in London.

* *John listens to the radio that Mary bought a car.*

Sentence structure

- **Predicates:** *listen*
- **Requires** a prepositional complement with the preposition “*to*”.
- Allows for **optional** adverbial, or prepositional modifiers.
- *dance* is a **transitive** verb (here transitivity as requiring a complement, not as requiring a nominal complement!).

Sentence structure

- Predicates: *give*

John gives Mary a book.

John gives a book to Mary.

? *John gives a book.*

? *John gives Mary.*

? *John gives to Mary.*

Sentence structure

- Predicates: *give*

John gives Mary a book.

? *John gives a book from Mary.*

John gives a book to Mary in Paris.

John gives Mary a book tomorrow.

Sentence structure

- Predicates: *give*
- Requires either
 - a nominal accusative (direct object) and a prepositional complement with the preposition “*to*”, or
 - a nominal accusative (direct object) and a nominal dative (indirect object)
- as complements.

Sentence structure

- Predicates: *give*
 - The indirect object cannot be realized as a preposition phrase with some other preposition, but “*to*”.
 - *give* is a **ditransitive** verb.

Sentence structure

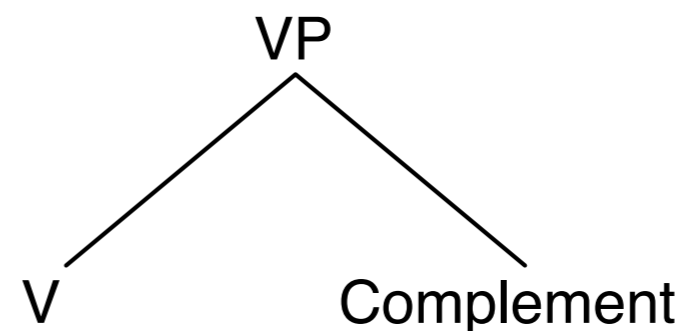
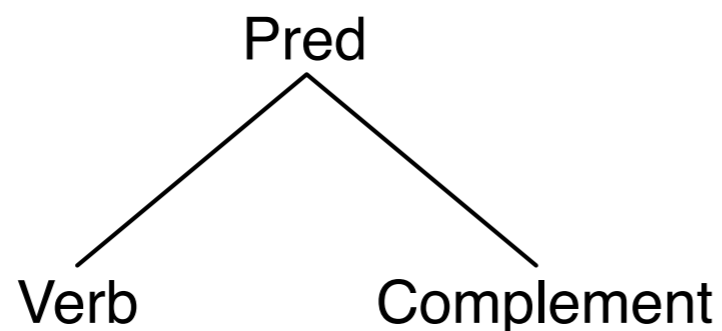
- Predicate structure
 - The choice of **syntactic category** and **semantic type** of **obligatory complements** is determined by the lexical choice of the predicate **head**, i.e. the verb.
 - The choice of **optional modifiers** is also determined by the lexical **head** of the predicate.

Sentence structure

- Predicate structure
 - Described in Verb Frames:
 - *give*: NP_{io} NP_{do}
 - *give*: NP_{do} PP_{to}
 - with additional description of semantic types!

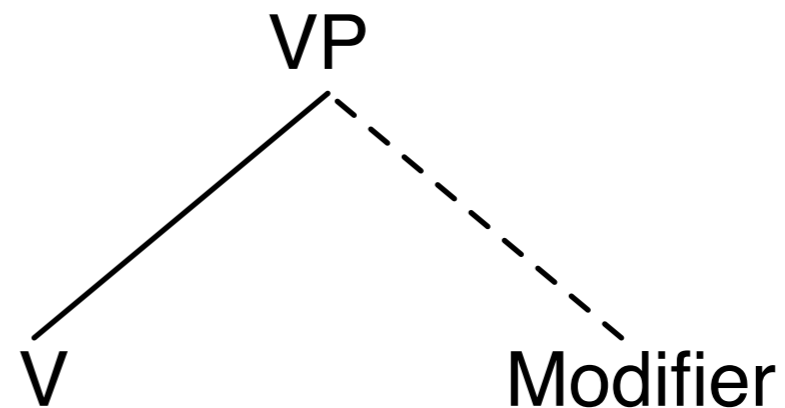
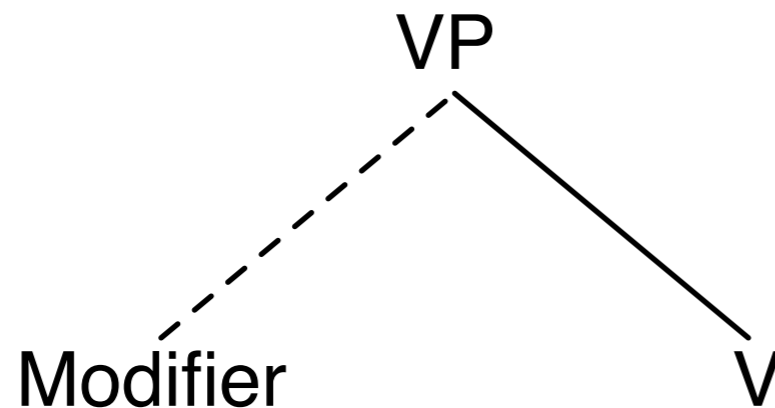
Sentence structure

- Predicate structure
 - It contains a verbal *head*.
 - It contains *obligatory complements* and *optional modifiers*.



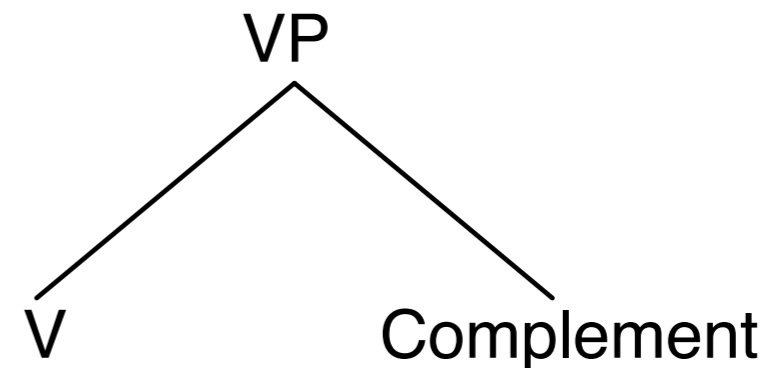
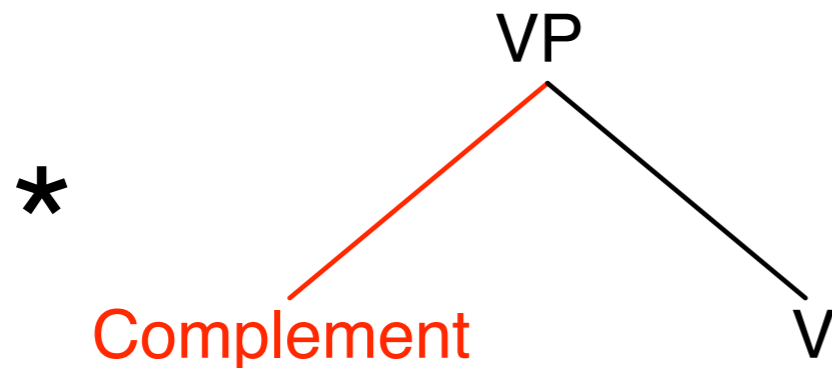
Sentence structure

- Predicate structure for intransitive verbs in English:
 - It contains a verbal *head*.
 - It contains *optional modifiers*.



Sentence structure

- Predicate structure for transitive verbs in English:
 - It contains a verbal *head*.
 - It contains the *obligatory complement*.



Sentence structure

- Possible complements of verbs e.g.:
 - Noun phrases: NP
 - Preposition phrases: PP
 - Sentences: S
- What about adverbs (Adv), adjectives (Adj), or verbs (V)?

Sentence structure

- Possible complements of verbs:
 - have to be phrases
 - these phrases have a head, and can have complements and modifiers themselves
 - What do standard phrases look like? (e.g. noun phrases, preposition phrases)

Sentence structure

- Examples of noun phrases in English:

John

a house

the big red house

John's big red house

the big red house of John's father

the big red house that John bought yesterday

Sentence structure

- Examples of noun phrases in English:
 - * *the John*
 - * *house a*
 - * *the house big red*
 - * *a big red house John's*
 - * *of John big red house*
 - * *that John bought yesterday the big red house*

Sentence structure

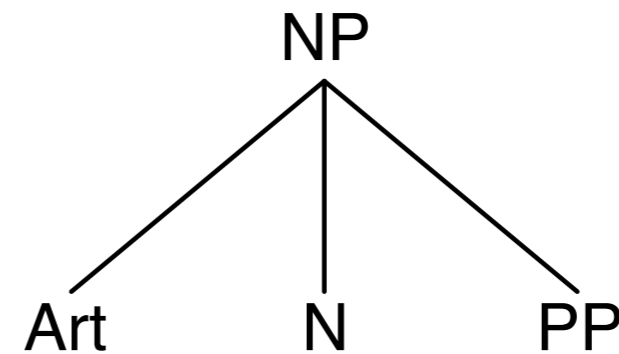
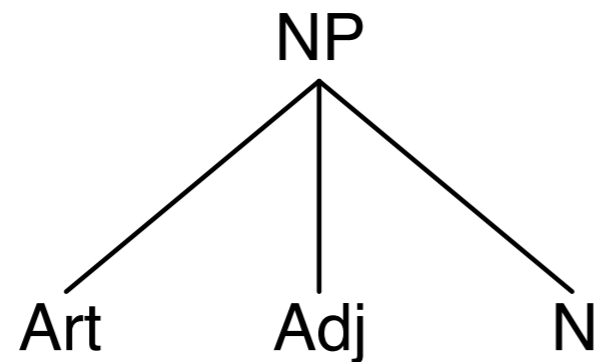
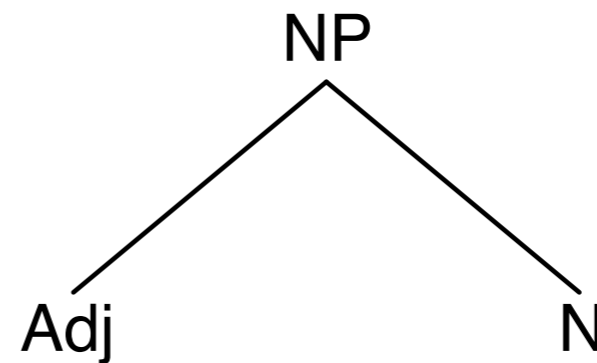
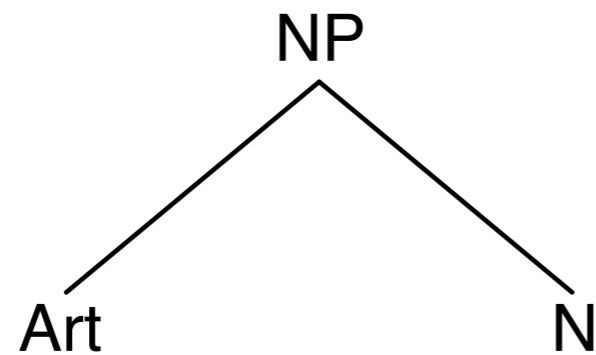
- Observations with noun phrases in English:
 - proper nouns do not come with articles
 - adjectives precede nouns
 - articles precede common nouns and optional adjectives
 - s-genitive (possessives) precede nouns
 - prepositional and sentential complements follow nouns

Sentence structure

- Generalizations about noun phrases in English:
 - there is only one noun head per noun phrase
 - articles are left-peripheral, complements right peripheral...
- but, wait... do nouns have complements like verbs do??? What would be arguments *pro* or *contra* this hypothesis?

Sentence structure

- Structures of noun phrases in English:



Sentence structure

- Observations about preposition phrases in English:

on the roof

* *the roof on*

* *in on the house*

* *in big*

* *in that Mary bought a car*

Sentence structure

- Generalizations about preposition phrases in English:
 - there is only one preposition head per preposition phrase
 - complements appear to the right...
- but, wait... do prepositions have complements like verbs do??? What would be arguments *pro* or *contra* this hypothesis?

Sentence structure

- Looking at all the phrases so far, the generalizations could be:
 - all phrases have a head
 - they have complements, if these are obligatory/selected
 - they may have optional modifiers
 - complements and modifiers appear in different positions

Sentence structure

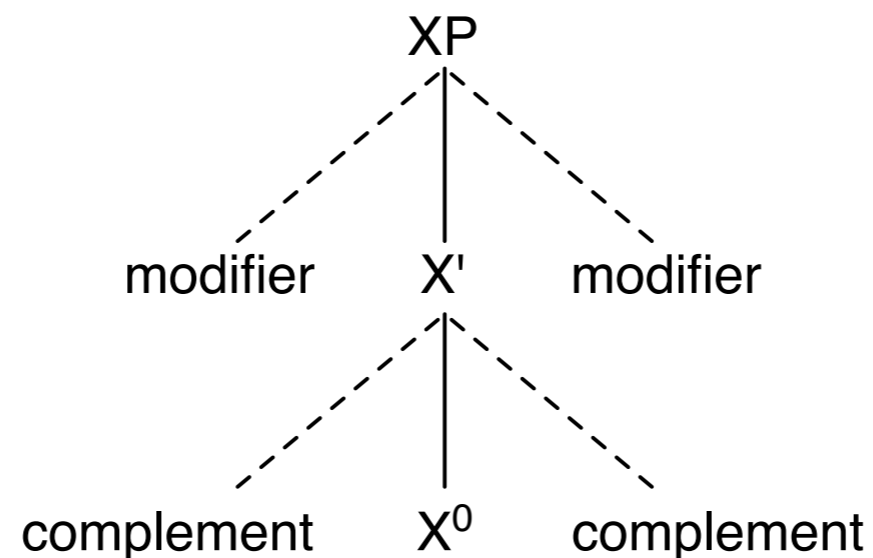
- Assumptions and observations so far:
 - there are heads and phrases
 - phrases have a head and inherit its properties
 - heads have impact on complements
 - modifiers modify phrases

Sentence structure

- Modifiers are not as closely related to the head, as complements are.
- In terms of structural relations, this could be expressed as: *structurally further away*, represented via the assumption of an intermediate structural level
- i.e. not just **head** and **phrase level**, but intermediate phrasal levels

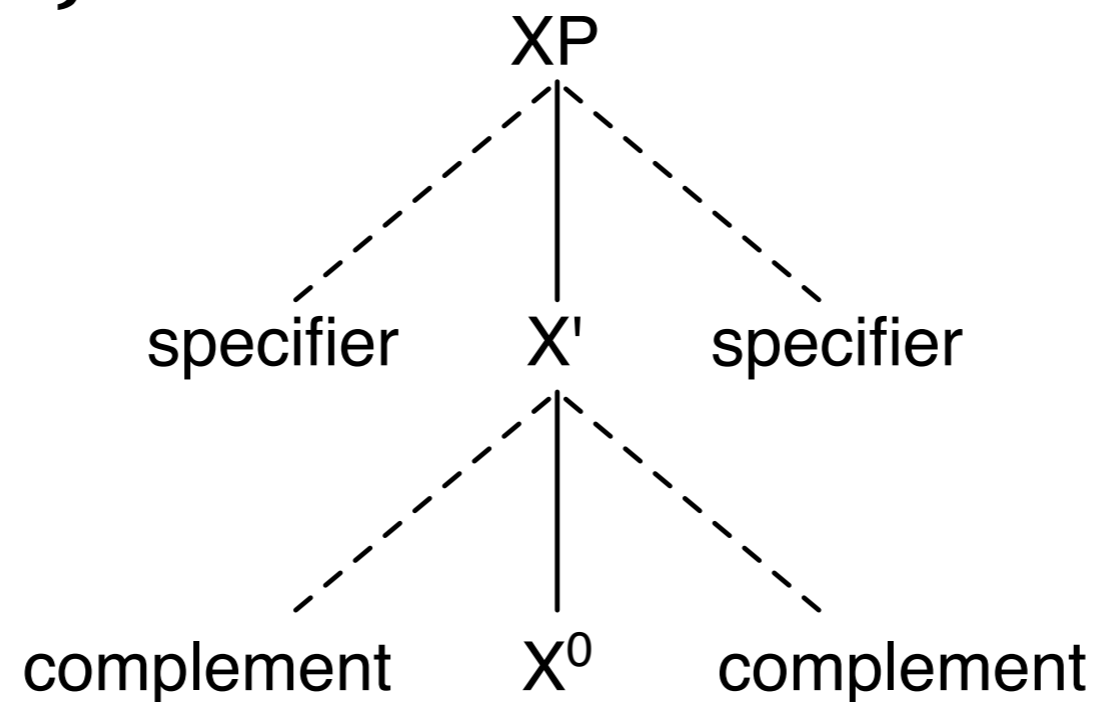
Sentence structure

- Assuming that:
 - for all categories: V, N, P, Adj, Adv
 - the same generalizations hold, then the general structural properties seem to be:



Sentence structure

- More specific:
 - with X^0 = head, for all X from $\{N, V, P, Adj, Adv, \dots\}$:



Exercises

- Structure of:
 - The boy in the tree near the house threw the ball into the yard.
 - The professor put the book about linguistics on the table near the podium.

Homework

- Homework assignment VII for the 14th of Oct.
 - Exercise 4 and
 - Exercise 7
 - at the end of chapter 5