

Syntax – Sentence Structure

I. Syntax

- A. Gives us the ability to say something new with old words. Though you have seen all the words that I'm using in this sentence before, it's likely you haven't seen them put together in exactly this way before. But you're perfectly capable of understanding the sentence, nonetheless.
- A. Structure: how to put words together.
- A. **Grammatical** structure: a way to put words together which is allowed in the language.
 - a. I often paint my nails green or blue.
 - a. *Often green my nails I blue paint or.

II. Syntactic Categories

- A. How to tell which category a word belongs to: look at the type of **meaning** the word has, the type of **affixes** which can adjoin to the word, and the **environments** you find the word in.
- A. Meaning: tell **lexical** category from **nonlexical** category.
 - a. **lexical** – meaning is fairly easy to paraphrase
 - i. *vampire* ≈ “night time creature that drinks blood”
 - i. *dark* ≈ “without much light”
 - i. *drink* ≈ “ingest a liquid”
 - a. **nonlexical** – meaning is much harder to pin down
 - i. *and* ≈ ??
 - i. *the* ≈ ??
 - i. *must* ≈ ??
 - a. **lexical categories: Noun, Verb, Adjective, Adverb, Preposition**
 - i. **N**: blood, truth, life, beauty (≈ entities, objects)
 - i. **V**: bleed, tell, live, remain (≈ actions, sensations, states)
 - i. **A**: gory, truthful, riveting, beautiful (≈ property/attribute of **N**)
 - 1. *gory* scene
 - 1. *riveting* tale
 - i. **Adv**: sharply, truthfully, loudly, beautifully (≈ property/attribute of **V**)
 - 1. speak *sharply*
 - 1. dance *beautifully*
 - i. **P**: to, from, inside, around, under (≈ indicates path or position w.r.t **N**)
 - 1. *to* the castle
 - 1. *inside* the enchanted forest
 - a. **nonlexical categories: Determiner, Degree Word, Qualifier, Auxiliary, Conjunction**
 - i. **Det**: the, a, those
 - i. **Deg**: too, so, very (usually modifies **A**, **Adv**, or other **Deg**)
 - 1. *too* close
 - 1. *very* beautifully
 - 1. *so* very dangerous

- i. **Qual**: always, never, almost (usually modifies **V**, **A**, **P**, **Deg**, or other **Qual**)
 - 1. *always* sing
 - 1. *never* perfect
 - 1. *almost* in
 - 1. *almost* too easily
 - 1. *almost* never indulge
- i. **Aux**: will, must, should (usually modifies a **V**)
 - 1. *will* dance
 - 1. *should* forgive
- i. **Con**: and, or, but (usually connect two of the same category)
 - 1. a fiend *and* a thief
 - 1. beautiful *but* dangerous
 - 1. approve *or* revile

A. Affixes: Category membership can sometimes be determined by inflection.

- a. **N**
 - i. plural “s”: swords (but not *rices)
 - i. possessive “ ‘s”: Captain Hook’s
- a. **V**
 - i. past tense “-ed”: hunted, brooded, thwarted
 - i. progressive “-ing”: hunting, brooding, thwarting
- a. **Adj**
 - i. comparative “-er”: darker, lovelier (but not *dangerouser)
 - i. superlative “-est”: darkest, loveliest (but not *dangerousest)

A. Environment: Most reliable. Look at the word’s distribution with respect to other categories.

- a. **N**
 - i. can be preceded by **Determiners**
 - i. the captain, a crocodile
 - i. *a broken, *the very
- a. **V**
 - i. can be preceded by an **Aux**
 - i. has ravished, will hunt
 - i. *has captain, *will deadly
- a. **A/Adv**
 - i. can be preceded by **Deg**
 - i. too beautiful, very quickly
 - i. *too captain, *very hunt

A. Multiple Membership – some items can belong to more than one category. Ex: *near*.

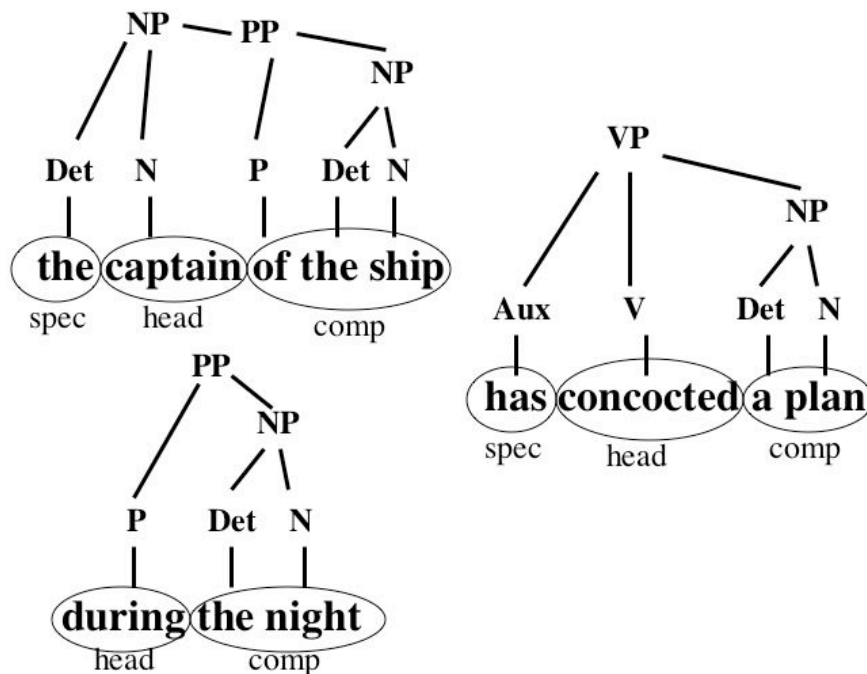
- a. The goblin king is *near* the forest. (**P**)
- a. The goblin king *neared* the forest. (**V**)
- a. The goblin king was *nearer* than they realized. (**Adj**)

III. Phrase Structure

A. A sentence isn't just a bunch of words strung together. Sentences consists of **phrases**, which are smaller pieces that seem to go together – such as **Noun Phrases**, **Verb Phrases**, **Prepositional Phrases**, etc.

- a. **NP**: the captain of the ship
- a. **VP**: has concocted a plan
- a. **PP**: during the night

A. Phrases consist of a **head**, a **complement**, and a **specifier**. The head, as the nucleus, is the only part which is necessary. The specifier helps make the meaning more precise. The complement is the remainder of the phrase, and is often a phrase itself. In English, the specifier always comes before the head and the complementizer always comes after the head.

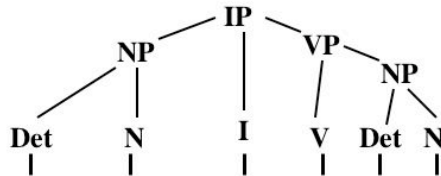


English Schema for a phrase: (Specifier) Head (Complement)

- A. Phrase Structure Rules – early on, linguists noticed certain patterns in the phrase structure of English. This allowed them to develop the schema above.
- a. NP → (Det) N (PP) [knowledge, his knowledge, knowledge of magic, his knowledge of magic]
 - a. PP → (Deg) P (NP) [in, almost in, in the castle, almost in the castle]
 - a. VP → (Adv) V (NP) [stalks, cleverly stalks, stalks his prey, cleverly stalks his prey]
- A. **Merge**: the operation which puts two pieces together in the proper phrase structure.
Ex: To get “the captain”, merge the Det “the” with the N “captain”

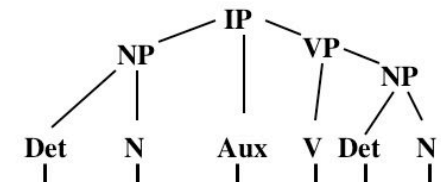
IV. Sentences

- A. Sentences are also thought to follow the schema – they have a head which is called “**Inflection**”. This head can be something like *past tense*, *singular-plural agreement*, or an Aux. A sentence is often referred to as an **Inflection Phrase (IP)**. Sentences are often composed of subjects (NP) and predicates (VP). The subject is the specifier of an IP and the predicate is the complement of the IP.
- A. Example Sentence Phrase Structure.



The goblins *Past* steal a child.

The goblins stole a child.



The goblins will steal a child.

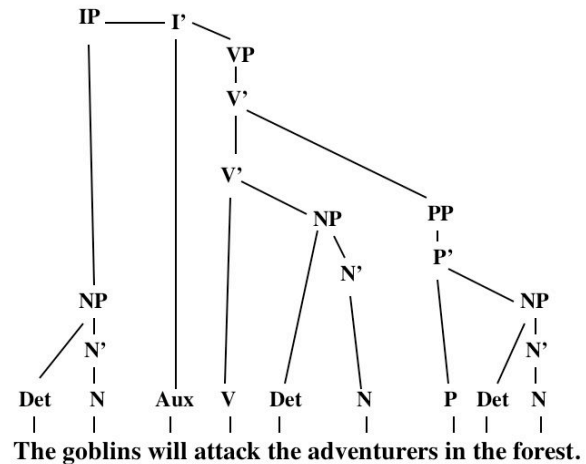
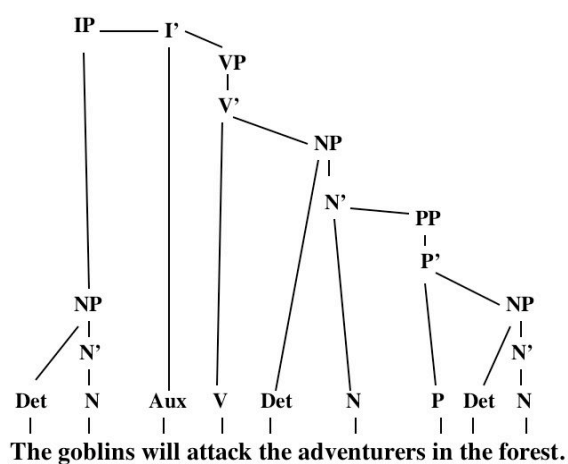
V. Tests for Phrase Structure

- A. Concerned with *what words go together in a phrase* = **constituent**.
- A. There are some tests which can help us decide this, but they don't *always* work.
- a. **Substitution** – some phrases can be replaced by certain words.
 - i. **NP**: pronouns → “they, it, he, she, them, her, him”
 1. *The goblins* will steal the child. → *They* will steal the child.
 1. The goblins will steal *the child*. → The goblins will steal *him*.
 1. The goblins adore *their king*. → The goblins adore *him*.
 - i. **VP**: “do so”
 1. The goblins will *steal the child*. → The goblins will *do so*.
 1. The king *will challenge him* tomorrow. The king will *do so* tomorrow.
 - iii. **PP**: “there, then, that way” (for “where, when, how”)
 1. He will arrange it *tomorrow*. → He will arrange it *then*.
 1. They will duel *in the park*. → They will duel *there*.
 1. I like my tea *with crumpets*. → I like my tea *that way*.
 - a. **Movement** – some phrases can be moved around to the front of the sentence.
 - i. The goblins will steal a child tomorrow night from the village.
 - ii. *From the village*, the goblins will steal a child tomorrow night.
 - iii. *Tomorrow night*, the goblins will steal a child from the village.
 - iv. *?A child*, the goblins will steal tomorrow night from the village.
 - v. *Steal a child tomorrow night from the village*, the goblins will.

- a. **Coordination** – If a group of words can be *anded* with something which we’re already sure is a certain type of phrase, that group of words is probably also that certain type of phrase.
- i. **NP**: *The goblins* (will go to the castle tomorrow) and *he* will go to the castle tomorrow.
 - ii. **VP**: He will *go the castle* and (he will) *do so*.
 - iii. **PP**: He will go *to the castle* and (he will go) *in the enchanted forest*.

VI. X’ Categories

- A. English Schema: (Spec) Head (Comp)
- B. Phrase Structure Rule: $XP \rightarrow (\text{Spec}) X (\text{Comp})$
- C. Now, with X’ category:
 - a. $XP \rightarrow (\text{Spec}) X'$
 - b. $X' \rightarrow X (\text{Comp})$
- D. Examples.



- E. Note: May have more than one X’ underneath an XP.
- F. Evidence for the existence of X’: substitution and coordination tests.
 - a. Substitution: “one”. Existence of N’. That wretched goblin → That wretched *one*, That *one*.
 - b. Coordination: Existence of I’. They *should kidnap the princess* and *will kidnap her*, if they have any sense.

VII. Subcategorization – aka “Options for the Complement of X”

- A. Not all words take the same sort of complements, even if they’re in the same category and even if they mean close to the same thing.
 - a. eat vs. devour.
 - i. I ate lunch. I ate.
 - ii. The tiger devoured its lunch. *The tiger devoured.
 - b. travel vs. go
 - i. We traveled the countryside.
 - ii. *We went the countryside.
 - c. memory vs. thought

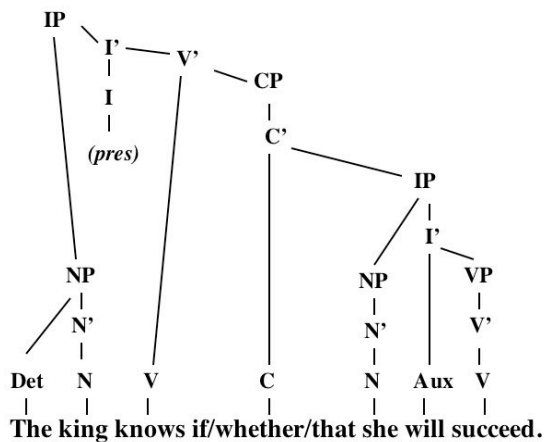
- i. his memory of that fateful day
- ii. *his thought of that fateful day
- d. curious vs. interested
 - i. curious about the crystal
 - ii. *interested about the crystal

B. Part of our knowledge of English is knowledge of the **subcategorization** of each of the words in our lexicon.

VIII. Complement Clauses

A. Some words can take whole sentences (**IPs**) as a complement. These are words like *that*, *if*, and *whether* – and they are known as **complementizers**. A complementizer is the head of a **Complementizer Phrase (CP)**.

B. Example.



C. Matrix Clause: the topmost IP → “The king knows...”

D. Complement Clause: the inner CP → “if/whether/that she will succeed”

E. Words that commonly take complement clauses:

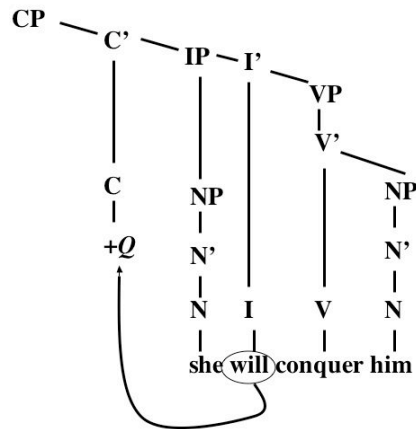
- a. believe, know, think → CP complement
- b. persuade, tell → NP complement, CP complement (*Tell him that...*)
- c. admit → PP complement, CP complement (*Admit to her that...*)
- d. certain, sure, positive → CP complement
- e. claim, belief, proof → CP complement

F. Recursion: Because complement clauses contain IPs and IPs can contain words which take complement clauses, it’s possible to just keep doing this and have a sentence that goes on forever. (*Jareth thinks that Sarah thinks that Hoggle thinks that Ludo thinks...*) However, our brains have a limit to how much they can remember. At a certain point, we lose track and can’t make sense of the sentence – even though its phrase structure is perfectly grammatical.

IX. Transformations

A. Yes/No Questions.

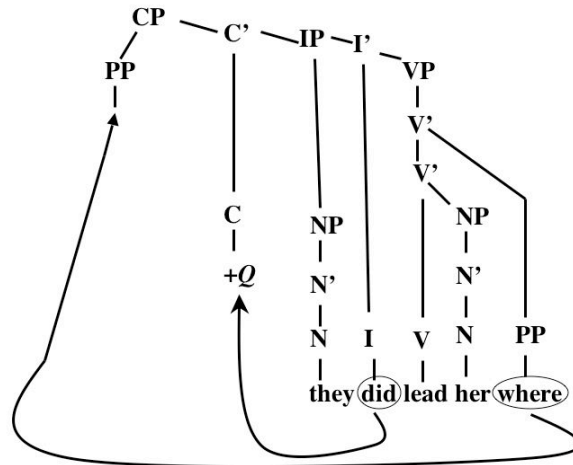
- a. Ex: “Will she conquer him?”
- b. ≈ “She will conquer him ?”
- c. Use **Move** to reposition the words so that they’re in the form we usually use when asking a question. “She will conquer him ?” → “Will she conquer him?”



- d. +Q = question marker → “Turn me into a question!”
- e. When movement occurs, a **trace** of the word that moves is left behind.
- i. Traces are silent.
 - ii. She will conquer him? → Will she *trace_{will}* conquer him? → “Will she conquer him?”
- f. **Move** word in I to C = “I-to-C movement”
- i. If C already has something occupying that position, we cannot form a yes/no question.
 - ii. The goblins wonder *if_C* the girl will make it in time.
 - iii. *The goblins wonder *if will* the girl make it in time.
- g. Do insertion: when we don’t have an **Aux**, we use some form of “do” in the C position.
- i. The goblin king laughed at her. → **Did** the goblin king laugh at her?
 1. Merge: +Q The goblin king did laugh at her.
 2. Move: Did (+Q) the goblin king *trace_{did}* laugh at her?
 - ii. The goblin king laughs at everyone. → **Does** the goblin king laugh at everyone?
 1. Merge: +Q The goblin does laugh at everyone.
 2. Move: Does (+Q) the goblin king *trace_{does}* laugh at everyone?

B. Wh-Questions

- a. Involve a “wh-word”: who, what, where, when, why, how
- b. Ex: Where did they lead her?
 - i. Merge: +Q They did lead her where ?
 - ii. Move: Where did (+Q) they *trace_{did}* lead her *trace_{where}* ?



- iii. Wh-word moves to Specifier of CP, I moves to C
- iv. Another Example: Subject Movement
 1. Who tricked her? → Who tricked her ?
 2. Who tricked (+Q) *trace*_{who} *trace*_{tricked} her ?

c. Deep Structure vs. Surface Structure

- i. Merge: Get all the words you need together in the “underlying order” → Deep Structure
- ii. Move: apply transformations → Surface (“Pronounced”) Structure
- iii. Note: There may be some cases where you have to do some Move before you’ve finished all your Merge.
 1. The goblins wonder what the girl will choose.
 2. Merge: the + girl + will + choose + what
 3. Move: what-the-girl-will-choose-*trace*_{what}
 4. Merge: The + goblins + wonder + what-the-girl-will-choose-*trace*_{what}

X. Universal Grammar and Parametric Variation

- A. individual languages can vary with respect to certain options (aka “syntactic parameters”)
- B. Example: order of specifier, head, and complement
 - a. English: XP → spec X', X' → X comp
 - b. Japanese: XP → spec X', X' → comp X
- C. Example: Verb “Raising” (V moves to I)
 - a. English: Verb in V. “She does_I not win_V.” vs. “*She wins_I not.”
 - b. French: Verb in I. “She wins_I not.”

Exercises

1. Phrase Structure

For each of the phrases below, draw the phrase structure (without X') and label the specifier, head, and complement of the phrase. For examples, see section III.

- a) a very clever sprite
- b) straight through the looking glass

- c) so very sure of himself
- d) always zipping through her thoughts
- e) a riveting story
- f) always upping the ante

2. Constituents

Determine if the items in *italics* are constituents or not, using any of the phrase structure tests. Make sure to indicate what tests you used.

Ex: The Captain *has fooled Tinkerbell*.

Coordination: The Captain *has fooled Tinkerbell* and *might mount a surprise attack*.

Constituent: Yes

- a) She might *choose the crystal* when the time comes.
- b) *Either the fairies or the goblins would* be a better choice than that.
- c) They fled *into the forest*.
- d) They looked *up the information* on google.
- e) The pirate *captain is a fiend*.
- f) *The gryphon and the lobster* will now do a dance for Alice.

3. Sentence Structure

Draw structure trees for each of the sentences below. Use X' structure. For examples, see section VI.

- a) Sarah never thought that Jareth would find her in time.
- b) Lily often wondered if Jack would ever return home with the unicorn.
- c) Wendy saw the captain with the telescope. (Meaning: The captain had the telescope.)
- d) Wendy saw the captain with the telescope. (Meaning: Wendy looked through a telescope to see the captain.)

4. Subcategorization.

Explain why the sentences below are not so good.

Ex: *The king suggested the princess to choose quickly.*

Explanation: *suggest* needs either a PP after it (*suggest to someone*) or a CP (*suggest that someone*)

- a) The prince requested for a new cloak.
- b) The king donated the peasants some of his old robes.
- c) Jack simply despised.

5. Transformation Structures

Draw the tree structures for each of the following questions. For examples, see section IX. Then, indicate what Merge and Move operations would have to occur in order to produce the surface order.

Ex of Merge and Move operations: *Where do you think you are going?*

Merge: +Q + you + do + think + you + are + going + where ?

Move: where-do(+Q)-you-*trace*_{do}-think-you-are-going- *trace*_{where} ?

- a) Did you have proof that she saved the unicorn?
- b) When did she break the crystal?
- c) Did she say that the king would forgive her?
- d) Who should dance a samba with the king?
- e) Who should drink a cup of wine with the king?

6. Parametric Options

The following data is from Malagasy, spoken on the island of Madagascar.

a) /Entin' kafe izy/
brings coffee he
"He brings coffee."

b) /Mankany amin' ny restauranta izy/
goes to the restaurant he

1. Draw phrase structures (with X') for each of the phrases above.
2. Do complements precede or follow their heads in Malagasy? Do specifiers proceed or follow their heads in Malagasy? Indicate what evidence you used.