

From words to sentences: Syntax

Syntax studies how one can combine words into sentences.

from Greek: **syn** **tax**
 together arrange

So what is there to be studied?

- (1) a. * *He in the arm was shot by a tall man.*
b. * *The baby seems sleeping.*
c. * *Peter generally laughs on such ideas.*
d. * *I go to the often cinema.*
e. * *Sylvia heard George to go.*
f. * *Morris walked the hill up.*
g. * *I saw the destroyed of the city.*

Which words occur in a sentence?

Words often require the presence of other words and phrases in the same sentence.

- (3) a. *I laugh.*
b. *I give her the book.*
c. *I said that she left.*
- (4) a. * *I laugh her the book.*
b. * *I give that she left.*
c. * *I said.*
- (5) a. *He said that Sting is playing in Columbus tonight.*
b. *He said Sting is playing in Columbus tonight.*
c. * *He said whether Sting would play in town tonight.*
- (6) a. *He asked whether Sting is playing in Columbus tonight.*
b. * *He asked Sting is playing in Columbus tonight.*
c. * *He asked that Sting is playing in Columbus tonight.*

Words are said to **select** or **subcategorize for** other words or phrases.

What is there to be studied?

- **the order** in which words can occur in sentences
- **the form** the word have to take in a sentence

Based on those observations we can distinguish **classes of words** which

- can **take each other's place** in a sentence

- (2) *John bought a green car on Thursday.*
Mary wrecked the dirty house before Christmas
I sold some neat bicycle in Chicago
He washed every beautiful toy near Germany

- **occur together** in a sentence

It's not (just) meaning

- (7) a. *Paul ate a steak.*
b. *Paul devoured a steak.*
- (8) a. *Paul ate.*
b. * *Paul devoured*

Also, even for sentences that make no sense, the order and form of the words matters:

- (9) a. *Colorless green ideas sleep furiously.*
b. * *Sleep ideas colorless furiously green.*
c. * *Colorless green ideas slept furiously.*

Some examples for what syntax needs to explain (I)

- (10) a. *Peter will **win** the race.*
b. * *Peter will **won** the race.*
c. * *Peter will **to win** the race.*
- (11) a. *Peter has **won** the race.*
b. * *Peter has **win** the race.*
c. *Peter has **to win** the race. (→ means something different)*
- (12) a. *Peter seems **to win** the race.*
b. * *Peter seems **win** the race.*
c. * *Peter seems **won** the race.*

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Word classes

Certain classes of words behave alike in terms of where they can occur in a sentence and what form they can take. Based on this, we can define *word classes* (lexical categories, parts of speech).

To illustrate that we implicitly know about possible word orders and forms, we can try to classify newly created words:

- (16) *He **fasras** rather well, don't you think?*
(17) *I saw an **expensive frasra** today.*
(18) *The **frasra** house is already sold.*

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Some examples for what syntax needs to explain (II)

- (13) a. ***He** left.*
b. * ***Him** left.*
- (14) a. *She sees **him**.*
b. * *She sees **he**.*
- (15) a. *She sees **him** leave.*
b. * *She sees **he** leave.*

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Jabberwocky by Lewis Carroll

(from *Through the Looking-Glass and What Alice Found There*, 1872)

'Twas brillig, and the slithy toves Did gyre and gimble in the wabe; All mimsy were the borogoves, And the mome raths outgrabe.	Came whiffing 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.
"Beware the Jabberwock, my son! The jaws that bite, the claws that catch! Beware the Jubjub bird, and shun The frumious Bandersnatch!"	"And hast thou slain the Jabberwock? Come to my arms, my beamish boy! O frabjous day! Callooh! Callay!"
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.	He chortled in his joy.
And, as in uffish thought he stood, The Jabberwock, with eyes of flame,	'Twas brillig, and the slithy toves Did gyre and gimble in the wabe; All mimsy were the borogoves, And the mome raths outgrabe.

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Open and closed word classes

Open class

- New items are added to the class over time.
- nouns, verbs, adjectives, and adverbs

Closed class

- classes with few words, to which new words are never or rarely added
- determiners, pronouns, prepositions, conjunctions

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Verbs (V)

- morphology – form third person, past tense, past participle, present participle:
walk walks walked walked walking
go goes went gone going
buy buys bought bought buying
run runs ran run running
- syntax:
 1. can combine with an auxiliary _
will go, have seen, should run, must leave, is swimming
 2. can be modified by and adverb: Adverb _ or _ Adverb
usually sleep, read carefully
- semantics – usually describes an action, a process or a state of being
But: problem with some verbs (*know, remember*)
But: hard to distinguish from nouns describing actions (*a thump*)

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Nouns (N)

- morphology – most nouns form plural
cat-s, house-s, kiss-es, men, sheep
- syntax – usually has a determiner (except proper names like *John*) and can be modified by an adjective:
Determiner (Adjective) _
a cat, many kisses, few men, several sheep
a small cat, many exciting kisses, few clever men, several bored sheep
- semantics – name of a person, thing or place.
But: problem with abstract nouns (*beauty, anger, aspect*) and actions (*a thump*).

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Adjectives (A, Adj)

- morphology:
 1. form comparative and superlative forms:
cool – cooler – coolest, successful – more successful – most successful, good – better – best
 2. many can be changed into adverbs by the *-ly* suffix:
sad – sadly, funny – funnily, nice – nicely, beautiful – beautifully
- syntax:
 1. Can modify a noun: Determiner _ N
a tall man, a cool day, a wonderful trip
 2. Can be modified by an adverb: Adverb _
very clever, extremely clever, unusually hot
- semantics – usually describes a quality or attribute

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Adverbs (Adv)

quickly, soon, morally, today, here, very, before

- morphology – often formed from adjectives by the *-ly* suffix.
But: *good – well, fast – fast, friendly – friendly, eastward*
- syntax – can modify verbs (hence ad-verbs), adjectives & often other adverbs.
 1. V _ or _ V
stop abruptly, usually eat
 2. _ Adj
amazingly cheap, very bad (very cannot modify a verb), *quite nice*
 3. _ Adv
very quickly, quite soon

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Determiners (Det)

articles (*a, the*), quantifiers (*many, any, all, several*), possessives (*my, your, his, her*)

Syntax – come before nouns: _ (Adj) N

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Summary of open classes

	Morphology	Syntax	Semantics
Noun	plural <i>house – houses</i>	D (Adj) _ <i>the big <u>house</u></i>	thing, person, place
Verb	tenses, . . . <i>walk – walked</i>	combines with an Aux <i>would <u>walk</u></i>	action
Adj	comparative, superlative <i>big – bigger – biggest</i>	D _ N <i>the <u>big</u> house</i>	quality, property
Adverb	often has <i>-ly</i> suffix <i>really, but: well</i>	modifies V, Adj, Adv <i>a <u>really</u> big house</i>	manner, extend, Idots

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Auxiliary verbs (Aux)

will, may, must, shall, would, can, have

Syntax:

1. Is followed by a verb: _ V
It will rain. You must be quiet.
2. Is negated directly: _ not
He cannot swim. She would not come.
**He doesn't can swim. *She doesn't would come.*

Normal verbs vs. Auxiliary verbs:

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	Verbs	Auxiliary verbs
negation	needs aux <i>do</i> <i>I don't want it.</i> <i>*I want not it.</i>	directly <i>*I don't will come.</i> <i>I will not come.</i>
question	needs aux <i>do</i> <i>Do you know it?</i> <i>Know you it?</i>	inversion <i>*Do you will come?</i> <i>Will you come?</i>
agreement	yes <i>He knows it.</i> <i>*He know it.</i>	no <i>*He wills come</i> <i>He will come</i>

Be, have and do are sometimes normal verbs and sometimes auxiliary verbs. (*I don't have it.* vs. *I have not seen it.*)

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Prepositions (P)

in, on, about, with, at, to, of, under

Syntax: stand before noun phrases (see later, simply NP = Det (Adj) N)

Semantics: usually express spacial, temporary, etc. relations.

on the table, with nice colors, about mammals

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Pronouns (Pron)

Words that stand for a noun or a whole noun phrase.

I, you, he, she, it, we, they, me, him, her, us, them

Note: It is better to classify possessive pronouns (traditionally called possessive pronouns) as determiners since they behave differently: pronouns act as nouns, but possessives modify nouns:

pronoun: *I run.* vs. **My run.*

possessive: **John likes I house.* vs. *John likes my house.*

pronoun: Based on Latin *pro* (*for*) + *noun*

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Conjunctions (Conj)

and, or, but, . . .

Syntax connect two words or phrases on the same level

1. N _ N (*women and men*)
2. V _ V (*run or walk*)
3. Adj _ Adj (*warm but rainy*)
4. S _ S (*I will talk and he will write.*)
5. etc.

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Words belonging to more than one lexical category

Some words belong to several categories:

- They have similar meaning:
 - *She talks very much.* vs. *She is giving three talks.*
 - *It's cold.* vs. *I got a cold.*
- They have completely different meanings:
 - *I can't bear the noise.* vs. *There is a bear in the wood.*
 - *tree barks* vs. *the dog barks*

Virtually all English nouns can be turned into verbs.