

# Chapter 3: Syntactic Forms, Grammatical Functions, and Semantic Roles

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# Introduction

PS rules allow us to represent the constituent structure of a given sentence in terms of lexical and phrasal **syntactic categories**. There are other dimensions of the analysis of sentences; one such way is using the notion of **grammatical functions** such as subject and object:

- (1) a. Syntactic categories: N, A, V, P, NP, VP, AP, ...  
 b. Grammatical functions: SUBJ (Subject), OBJ (Object),  
 MOD (Modifier), PRED (Predicate), ...
- (2) The monkey kicked a boy on Monday.
- (3) a. [<sub>S</sub> [<sub>NP</sub> The monkey] [<sub>VP</sub> kicked [<sub>NP</sub> a boy] [<sub>PP</sub> on Monday]]].  
 b. [<sub>S</sub> [<sub>SUBJ</sub> The monkey] [<sub>PRED</sub> kicked [<sub>OBJ</sub> a boy] [<sub>MOD</sub> on Monday]]].

we consider the entire VP to be a PRED (predicate) which describes a property of the subject.

We also can represent sentence structure in terms of **semantic roles**.

## Semantic roles

Semantic roles are also often called ‘thematic roles’ or “theta roles” in generative grammar

Semantic role: Constituents can be considered in terms of conceptual notions of semantic roles such as agent, patient, location, instrument, and the like. A semantic role denotes the underlying relationship that a participant has with the relation of the clause, expressed by the main verb.

- (4) a. John tagged the monkey in the forest.  
 b. The monkey was tagged in the forest by John.
- (5) a.  $[[_{\text{agt}} \text{John}] [_{\text{pred}} \text{tagged} [_{\text{pat}} \text{the monkey}] [_{\text{loc}} \text{in the forest}]]]$ .  
 b.  $[_S [_{\text{pat}} \text{The monkey}] [_{\text{pred}} \text{was tagged} [_{\text{loc}} \text{in the wood}] [_{\text{agt}} \text{by John}]]]$ .

Both of these sentences describe a situation in which someone named John tagged a particular monkey. In this situation, John is the agent and the monkey is the patient of the tagging event. This in turn means that in both cases, John has the semantic role of agent (*agt*), whereas the monkey has the semantic role of patient (*pat*), even though their grammatical functions are

# subjects



These two sentences have exactly the same words and have the same **predicator** *devoured*. Yet they are significantly different in meaning, and the main difference comes from what serves as **subject** or **object** with respect to the predicator. In (6a), the subject is *the cat*, whereas in (6b) it is *the rat*, and the object is *the rat* in (6a) but *the cat* in (6b).

- subject, predicate, predicate

- (6) a. [The cat] [devoured [the rat]].  
 b. [The rat] [devoured [the cat]].

- semantic role

- (7) a. My brother wears a green overcoat.  
 b. This car stinks.  
 c. It rains.  
 d. The committee disliked her proposal.

How can we identify the grammatical function of a given constituent?  
 Several tests can be used to determine grammatical function

Wearing a green overcoat, stinking, raining, or disliking one's proposal are not agentive activities; they indicate stative descriptions or situations. Such facts show that we cannot rely on the semantic roles of agent for determining subjecthood.

## subjecthood tests: agreement

**Agreement:** The main verb of a sentence agrees with the subject in English:

- (8) a. She never writes/\*write home.  
b. These books \*saddens/sadden me.  
c. Our neighbor takes/\*take his children to school in his car.
- (9) a. The book, including all the chapters in the first section, is/\*are very interesting.  
b. The effectiveness of teaching and learning \*depend/depends on several factors.  
c. The tornadoes that tear through this county every spring \*is/are more than just a nuisance.

The subject in each example (09) is *book*, *effectiveness*, and *tornadoes* respectively, even though there are nouns closer to the main verb. This indicates that it is not simply the linear position of the NP that determines agreement; rather, agreement shows us what the subject of the sentence is.

## subjecthood tests: tag question

**Tag questions:** A tag question, a short question tagged onto the end of an utterance, is also a reliable subjecthood test:

The pronoun in the tag question agrees with the subject in person, number, and gender – it refers back to the subject, but not necessarily to the closest NP, nor to the most topical one.

- (10) a. The lady singing with a boy is a genius, isn't she/\*isn't he?  
b. With their teacher, the kids have arrived safely, haven't they/\*hasn't he?

## subjecthood tests: Subject-auxiliary inversion:

In forming questions and other sentence-types, English has subject-auxiliary inversion, which applies only to the subject.

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|--|--|
| <p>(11) a. This teacher is a genius.<br/>         b. The kids have arrived safely.<br/>         c. It could be more detrimental.</p> | <p>the formation of ‘Yes/No questions’ such as these involves the first tensed auxiliary verb moving across the subject: more formally, the auxiliary verb is inverted with respect to the subject, hence the term ‘subject-auxiliary inversion’. This is not possible with a non-subject: (13b)</p> |
| <p>(12) a. Is this teacher a genius?<br/>         b. Have the kids arrived safely?<br/>         c. Could it be more detrimental?</p> |  |
| <p>(13) a. The kids in our class have arrived safely.<br/>         b. *Have in our class the kids arrived safely?</p>                |  |

# Direct objects

A direct object (DO) is canonically an NP, undergoing the process denoted by the verb:

- (14) a. His girlfriend bought this computer.  
b. That silly fool broke the teapot.
- (15) a. Thunder frightens [the dog].  
b. The dog fears [thunder].

His wife bought him a computer.

buying = computer => A computer was bought by his wife (for him).

However, this is not a solid generalization. The objects (OBJ) in (15a) and (15b) are not really affected by the action. In (15a) the dog is experiencing something, and in (15b) the thunder is somehow causing some feeling in the dog:

Thus, semantic roles are not sufficient to identify the object. How about of passivization, in which a notional passive object appears as subject.



## DO: passivization

The objects that undergo passivization are direct objects, distinct from indirect objects.

- (16) a. His girlfriend bought this computer **for him**.  
b. The child broke the teapot by accident.
- (17) a. This computer was bought **for him** by his girlfriend.  
b. The teapot was broken by the child by accident.
- (18) a. This item belongs to the student.  
b. \*The student is belonged to by this item.
- (19) a. He remained a good friend to me.  
b. \*A good friend is remained to me (by him).

What we can notice here is that the objects in (16) are ‘promoted’ to subject in the passive sentences. The test comes from the fact that non-object NPs cannot be promoted to the subject:

## Indirect objects

An indirect object (IO) is one which precedes a direct object (DO), as in (20); IOs are NPs and have the semantic roles of goal, recipient, or benefactive:

- (20) a. I threw [the puppy] [the ball]. (IO = goal)  
b. John gave [the boys] [the CDs]. (IO = recipient)  
c. My mother baked [me] [a birthday cake]. (IO = benefactive)

In examples like (20), passive has the property of making the IO into the subject.

John gave me *some money*  $\neq$  John gave some money to me.

I was given some money (by John)  $\neq$  Some money was given to me (by John).

## Indirect objects: a caution

- passivization

- (21) a. \*The CDs were given the boys by John.  
b. \*A review copy of the book was sent her by the publisher.
- (22) a. The boys were given the CDs (by John).  
b. She was sent a review copy of the book (by the publisher).

- dative alternation where the semantic role of the IO is expressed as an oblique PP, following the DO

- (23) a. John gave the CDs to the boys.  
b. The publisher sent a review copy of the book to her.  
c. My mother baked a cake for me.
- (24) a. The CDs were given to the boys by John.  
b. A review copy of the book was sent to her by the publisher.  
c. This nice cake was baked for me by my mother.

## Predicative complements: basic

There also are NPs which follow a verb but which do not behave as DOs or IOs. Consider the following sentences:

- basic data

- (25) a. This is *my ultimate goal*.  
b. Michelle became *an architect*.
- (26) a. They elected Graham *chairman*.  
b. I consider Andrew *the best writer*

- no passivization

- (27) a. \*Chairman was elected Graham.  
b. \*The best writer was considered Andrew.

The italicized elements here are traditionally called ‘predicative complements’ in the sense that they function as the predicate of the subject or the object. However, even though they are NPs, they do not passivize:

# Predicative complements vs. object

(28) a. John made Kim *a great doll*.

b. John made Kim *a great doctor*.

(29) a. (28)a: Kim  $\neq$  a great doll

b. (28)b: Kim = a great doctor

(30) a. The situation became *terrible*.

b. This map is *what he wants*.

c. The message was *that you should come on time*.

(31) a. I made Kim *angry*.

b. I consider him *immoral*.

c. I regard Andrew *as the best writer*.

d. They spoil their kids *rotten*.

Even though the italicized expressions here are both NPs, they function differently. The NP *a great doll* in (28a) is the direct object, as in *John made a great doll for Kim*, whereas the NP *a great doctor* in (28b) cannot be an object: it serves as the predicate of the object *Kim*. If we think of part of the meaning informally, only in the second example would we say that the final NP describes the NP *Kim*.

In addition, phrases other than NPs can serve as predicative complements:

## oblique complements

- (32) a. John put books *in the box*.  
b. John talked *to Bill about the exam*.  
c. She reminded him *of the last time they met*.  
d. They would inform Mary *of any success they have made*.
- (33) a. John gave a book *to the student*.  
b. John bought a book *for the student*.  
c. John asked Bill *of a question*.

## modifiers vs. complements

- Complements (DO, IO, predicative complement, and oblique complement) are obligatory whereas modifiers are optional

- (34) a. The bus stopped *suddenly*.  
b. Shakespeare wrote his plays *a long time ago*.  
c. They went to the theater *in London*.  
d. He failed chemistry *because he can't understand it*.

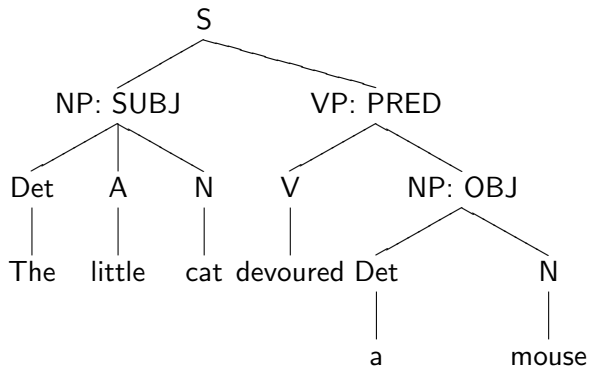
- stacking

- (35) a. \*John gave Tom [a book] [a record].  
b. I saw this film [several times] [last year] [during the summer].

- (36) a. My uncle visited today.  
b. \*Today was visited by my uncle.

## form and function together

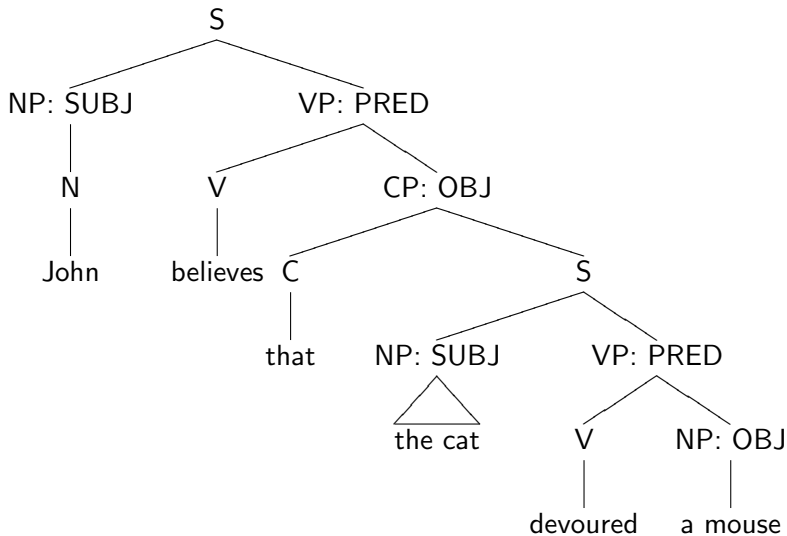
(37)





## form and function together

(38)



# form or category of the subject

- (39) a. [<sub>NP</sub> The termites] destroyed the sand castle.  
 b. [<sub>VP</sub> Being honest] is not an easy task.  
 c. [<sub>CP</sub> That John passed] surprised her.  
 d. [<sub>VP</sub> To finish this work on time] is almost unexpected.  
 e. [<sub>S</sub> What John said] is questionable.<sup>1</sup>  
 f. [<sub>PP</sub> Under the bed] is a safe place to hide.

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<sup>1</sup>The subject clause is canonically categorized as CP. See Chapter 10 and 11 how this S is different from a canonical S too.

# form or category of the object

- (40) a. I sent [<sub>NP</sub> a surprise present] to John.  
 b. They wondered [<sub>S</sub> what she did yesterday].  
 c. They believed [<sub>CP</sub> that everybody would pass the test].  
 d. Are you going on holiday before or after Easter? I prefer [<sub>PP</sub> after Easter].

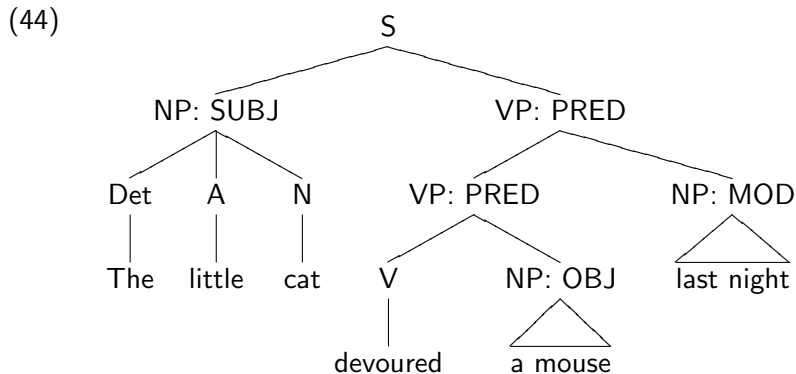
# form of the subject

- (41) a. [That John passed] surprised her, didn't it?  
 b. [[That the march should go ahead] and [that it should be cancelled]] have/\*has been argued by different people at different times.
- (42) a. [To finish it on time] made quite a statement, didn't it?  
 b. [[To delay the march] and [to go ahead with it]] have/\*has been argued by different people at different times.

## modifier

- (43) a. The little cat devoured a mouse [<sub>NP</sub> last night].  
 b. John left [<sub>AdvP</sub> very early].  
 c. John has been at Stanford [<sub>PP</sub> for four years].  
 d. John studied hard [<sub>VP</sub> to pass the exam].  
 e. She disappeared [<sub>S</sub> when the main party arrived].

## modifier



# semantic roles

- Semantic roles were introduced as a way of classifying the arguments of predicators (mostly verbs and adjectives) into a closed set of participant types.
  - Agent: A participant which the meaning of the verb specifies as doing or causing something, possibly intentionally. Examples: subject of *eat*, *kick*, *hit*, *hammer*, etc.
- (45) a. *John* ate his noodle quietly.  
b. *A boy* hit the ball.  
c. *A smith* hammered the metal.

# semantic roles

Patient: A participant which the verb characterizes as having something happen to it, and as being affected by what happens to it. Examples: object of *kick*, *hit*, *hammer*, etc.<sup>2</sup>

- (46) a. A boy hit *the ball*.  
 b. A smith hammered *the metal*.

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<sup>2</sup>Patient and theme are often unified into 'undergoer' in the sense that both the patient and theme individual undergo the action in question.



# semantic roles

Experiencer: A participant who is characterized as aware of something.

Examples: subject of perception verbs like *feel*, *smell*, *hear*, *see*, etc.

- (47) a.     *The students* felt comfortable in the class.  
      b.     *The student* heard a strange sound.

# semantic roles

Theme: A participant which is characterized as changing its position or condition, or as being in a state or position. Examples: direct object of *give*, *hand*, subject of *come*, *happen*, *die*, etc.

- (48) a. John gave *a book* to the students.  
 b. *John* died last night.

Benefactive: The entity that benefits from the action or event denoted by the predicator. Examples: oblique complement of *make*, *buy*, etc.

- (49) a. John made a doll for *his son*.  
 b. John bought a lot of books for *his sons*.

# semantic roles

Source: The one from which motion proceeds. Examples: subject of *promise*, object of *deprive*, *free*, *cure*, etc.

- (50) a. *John* promised Bill to leave tomorrow morning.  
 b. John deprived *his sons* of game cards.

Goal: The one to which motion proceeds. Examples: subject of *receive*, *buy*, indirect object of *tell*, *give*, etc.

- (51) a. *Mary* received an award from the department.  
 b. John told the rumor to *his friend*.

## semantic roles

**Location:** The thematic role associated with the NP expressing the location in a sentence with a verb of location. Examples: subject of *keep*, *own*, *retain*, locative PPs, etc.

- (52) a. John put his books *in the attic*.  
 b. *The government* kept all the money.

**Instrument:** The medium by which the action or event denoted by the predicator is carried out. Examples: oblique complement of *hit*, *wipe*, *hammer*, etc.

- (53) a. John hit the ball with *a bat*.  
 b. John wiped the window with *a towel*.

# semantic roles: good cases

- (54) a. [agt The cat] chased [pat the mouse].  
 b. [pat The mouse] was chased by [agt the cat].
- (55) a. There still remains an issue to be solved.  
 b. There lived a man with his grandson.  
 c. At the same time there arrived a lone guest, a tall, red-haired and incredibly well dressed man . . . .
- (56) a. \*There sang a man with a pipe.  
 b. \*There ran a man with an umbrella.

## semantic roles: bad cases

- (57) a. John resembles his mother.  
b. A is similar to B.
- (58) a. John runs into the house.  
b. Mary looked at the sky.