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

Syntactic Constructions in English
Kim and Michaelis (2020)
1 Introduction

2 Grammatical Functions
   - Subjects
   - Direct Objects and Indirect Objects
   - Predicative Complements
   - Oblique Complements
   - Modifiers

3 Bringing form and function together

4 Form-function mismatches

5 Semantic roles

6 Conclusion
There are two basic ways of representing sentence structures: one with syntactic categories and the other with grammatical functions.

1. a. Syntactic categories or forms: N, A, V, P, NP, VP, AP, . . .
   b. Grammatical functions: subj (subject), obj (object), mod (modifier), pred (predicate), . . .

2. The driver crashed his car into the back of another car.

3. a. \[ S [NP The driver] [VP crashed [NP his car] [PP into the back of another car]] ]
   b. \[ S [SUBJ The driver] [PRED crashed [OBJ his car] [MOD into the back of another car]] ]
Semantic roles

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

Constituents can be considered in terms of conceptual notions of semantic roles such as agent, patient, location, instrument, and the like.

A semantic role label tells us in essence ‘who is doing what to whom’ – that is, what sort of participant each constituent expresses in a clause, whether that clause describes an event or a state.

(4) a. \[agt \text{ The hurricane} [pred \text{ destroyed } pat \text{ their house}]]\].

b. \[pat \text{ Their house} [pred \text{ was destroyed } agt \text{ by the hurricane}]]\].
How can we identify the grammatical function of a given constituent? Several tests can be used to determine grammatical functions.
Subjects

Same words, but what about grammatical functions like subject and object?

(5) a. [The dark] [devoured [the light]].
   b. [The light] [devoured [the dark]].
Not reliable semantic tests for subjects

The most common sentence structure seems to be the one where the NP subject performs the action denoted by the verb (thus having the semantic role of agent). However, this is not always so.

(6) a. She wears a stylish set of furs.
    b. This place physically stinks.
    c. It is raining heavily.
    d. Wolfgang himself disliked his hometown.

Such facts show that we cannot equate the grammatical role of subject with the semantic role of agent.
Agreement: The main verb of a sentence agrees with the subject in English.

(7) a. He never writes/*write his books from an outline.
    b. The events of the last days *saddens/sadden me.
    c. Ashley takes/*take her mother out to lunch.
Simply being closer to the main verb does not entail subjecthood.

(8) a. Every one of those children is/*are important.
   b. The legitimacy of their decisions depends/*depend on public support for the institution.
   c. The results of this analysis *is/are reported in Table 6.
Tag questions: A tag question is an abbreviated question at the end of a clause consisting of an auxiliary verb followed by a pronoun referring back to the subject of the main clause. The tag-question formation is also a reliable subjecthood test.

(9) a. The lady singing with that 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?
Subject-auxiliary inversion: In forming questions and other sentence-types, English uses subject-auxiliary inversion, a pattern in which the subject immediately follows an auxiliary verb.

(10) a. This guy is a genius.
    b. The rules have changed.
    c. It could be more harmful on super hot days.

(11) a. Is [this guy] a genius?
    b. Have [the rules] changed?
    c. Could [it] be more harmful on super hot days?

(12) a. Most of the people in this country have already made the decision.
    b. *Have [In this country] most of the people already made the decision?
Not reliable semantic tests for direct objects

- A direct object (DO) is canonically an NP denoting the entity that undergoes a change of state or a change of location as a result of the action denoted by the verb.

  (13) a. The burglar broke the window.
  b. She bought this blue hat for her boyfriend.

- However, this is not a solid generalization.

  (14) a. Thunder frightens [the dog].
  b. The dog fears [thunder].

- Once again, the data show us that we cannot identify the object based on semantic roles.
A much more firm criterion is the syntactic construction **passive**, in which a non-agent appears as subject.

(15)  a. The window was broken by the burglar.
     b. This blue hat was bought for her boyfriend by her.
The test relies on the fact that non-object NPs cannot be promoted to the subject.

(16) a. Jones remained a faithful servant to Rice.
    b. *A faithful servant was remained to Rice by Jones.

The generalization is that only those NPs that serve as direct objects of their verbs can be promoted to subject by means of passive.
An indirect object (IO) is an NP that occurs with a DO in a ditransitive sentence, and in this construction it precedes the DO.

(17) Subject – Verb – IO (Indirect Object) – DO (Direct Object)
The IO canonically has the semantic role of goal, recipient or benefactive.

(18) a. The catcher threw [me] [the ball]. (IO = goal)
    b. She gave [the police] [the license plate number]. (IO = recipient)
    c. She’d baked [him] [a birthday cake]. (IO = benefactive)

(19) a. I was thrown the ball (by the catcher).
    b. The police were given the license plate number (by her).
    c. He had been baked a birthday cake (by her)
Examples with the IO-DO order are different from those where the semantic role of the IO is expressed as an oblique PP, following the DO.

(20) a. The catcher threw the ball to me.
    b. She gave the license plate number to the police.
    c. She’d baked a birthday cake for him.

Here, it is the DO that is promoted to subject in the passive voice, as it immediately follows the V in the active form.

(21) a. The ball was thrown to me by the catcher.
    b. The license plate number was given to the police by her.
    c. A birthday cake had been baked for him by her.
The ‘NP PP’ pattern is more frequently used than the ‘NP NP’ ditransitive pattern; the latter is restricted to the specific semantic roles mentioned above.

(22) a. They have tuned him into a zombie.
    b. *They have turned a zombie him.
There are also NPs that follow a verb but do not behave as DOs.

(23) a. She is a beautiful, young lady.
    b. John became a huge supporter of the group.

(24) a. The Democrats elected Bill Clinton president.
    b. She didn’t consider Jimmy a boyfriend.

The italicized elements here are traditionally called ‘predicative complements’ in the sense that they function as a predicate describing the subject or object.
Although they are NPs, they cannot be promoted to subject by passive.

(25)    a.  *President was elected Bill Clinton (by the Democrats).
        b.  *A boyfriend was considered Jimmy (by her).
Semantic differences between direct objects and object predicative complements

(26) a. He made Jack a sandwich.
   b. I made Jack a football star.

(27) a. (26a): Jack \neq \text{a sandwich}
   b. (26b): Jack = \text{a football star}
Non-NP predicative complements

- Phrases other than NPs can serve as predicative complements.

(28) a. The revolution then became \([_{AP} \text{ necessary}]\).
   b. Passion is \([_{S} \text{ what makes you roll up your sleeves and get it done}]\).
   c. The irony was \([_{CP} \text{ that there was nothing repairable about any of this}]\).

(29) a. My two sons really made her \([_{AP} \text{ happy}]\).
   b. Male students regard English \([_{PP} \text{ as the language for better employment, technology and tourism}]\).
   c. His mother-in-law spoiled her grandchildren \([_{AP} \text{ rotten}]\).
What is the grammatical function of the italicized expressions below? Neither objects nor predicative complements!

(30)  a. He talked *to them about the health care bill*.
     b. He just reminded me *of someone I used to know*.
     c. They informed clients *of problems*.

Since their presence is obligatory, for syntactic well-formedness, they are called oblique complements.

Roughly speaking, ‘oblique’ contrasts with the ‘direct’ functions of subject and object, and oblique phrases are typically expressed as PPs in English.
Most ditransitive verbs can also take oblique complements.

(31) a. I gave the phone to my husband.
    b. Her uncle taught English to her.
The functions of DO, IO, predicative complement, and oblique complement all have one common property: they are all selected by the verb, and we view them as being present to ‘complement’ the verb to form a legitimate VP.

Hence, these are called complements (COMPS), and typically they cannot be omitted.
Unlike these complements required by a lexical head, there are expressions which do not complement the predicate in the same way, and which are truly optional.

(32) a. She stopped and looked up suddenly.
    b. I made my choice a long time ago.
    c. The videographers were indicted in Texas.
    d. He wasn’t popular because he was a genius at math.

The italicized expressions here are all optional and function as modifiers (also called ‘adjuncts’ or ‘adverbial’ expressions).

These modifiers specify the manner, location, time, or reason, among many other properties, of the situations expressed by the given sentences – informally, they are the (how, when, where, and why) phrases.
One additional characteristic of modifiers is that they can be stacked, whereas complements cannot.

(33) a. *John gave Tom [a book] [a record].
    b. Oswald was seen with him [several times] [last summer].

Temporal adjuncts do not become the subject of a passive sentence, suggesting that they cannot serve as objects.

(34) a. Gary visited yesterday.
    b. *Yesterday was visited by Gary.
We now can analyze each sentence in terms of grammatical functions as well as structural constituents.

(35) The little cat devoured a mouse.
Assigning grammatical functions within complex sentences is not different.

(36)

\[
S \rightarrow NP : \text{SUBJ} \quad VP : \text{PRED}
\]

\[
NP : \text{SUBJ} \quad VP : \text{PRED}
\]

\[
N \quad V \quad CP : \text{OBJ}
\]

\[
\text{John} \quad \text{believes} \quad \text{that} \quad \text{NP : SUBJ} \quad \text{VP : PRED}
\]

\[
\text{the cat} \quad \text{devoured} \quad \text{a mouse}
\]
In the traditional generative syntax, grammatical functions like subject and direct object can be indirectly defined by PS rules.

(37) a. Subject-of: [NP, S] (S \rightarrow NP, VP)  
b. Direct-Object-of: [NP, VP] (VP \rightarrow V, NP)
However, not only NPs but also other various categories (e.g., CP, VP, and PP) can function as subject or object.

(38) a. \([\text{NP} \text{ The inferno}]\) destroyed the downtown area.
b. \([\text{VP} \text{ Loving you}]\) is not in my control.
c. \([\text{CP} \text{ That he doesn’t achieve perfection}]\) is reasonable.
d. \([\text{VP} \text{ To experience the emotion}]\) is sufficient in itself to gain an understanding.
e. \([\text{PP} \text{ Under the bed}]\) is a safe place to hide.

(39) a. Mr. Mulvaney sent \([\text{NP} \text{ a memo}]\) to employees.
b. Gina wondered \([\text{S} \text{ what other bills her mother might have neglected to pay}]\).
c. They believed \([\text{CP} \text{ that a tattoo or piercing had hurt their chances of getting a job}]\).
d. Are you going on holiday before or after Easter? I prefer \([\text{PP} \text{ after Easter}]\).
Subject tests for non-NP subjects

Subject tests like subject-verb agreement and tag question support the assumption that these non-NP phrases are the subject.

(40) a. [That he doesn’t achieve perfection] is reasonable, isn’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.

(41) a. [To finish it on time] is beyond his ability, isn’t it?
    b. [[To delay the march] and [to go ahead with it]] have/*has been argued by different people at different times.
(42)

Non-NP subjects: sample tree

S

VP: SUBJ

To finish the work

VP: PRED

V

is

PP

beyond his ability
Non-NP objects

- Non-NP phrases like CP, VP, or even PP can function as the object.

(43) a. They believe [that group work is an essential tool for students’ future lives].
    b. They prefer [to study in a formal setting].
    c. I’ll choose [after the holidays] to hold my party.
Object tests for non-NP objects

Object tests like the passive tell us that these non-NPs function as the object.

(44) a. [Group work is an essential tool for students’ future lives] is believed.
    b. [To study in a formal setting] is preferred.
    c. [After the holidays] will be chosen to hold my party.
Diverse categories for modifiers

Not only AdvP, but also phrases such as NP, S, VP, or PP can function as a modifier.

(45) a. The little cat devoured a mouse \([_{NP} \text{ last night}].\)
    b. This race has started \([_{AdvP} \text{ very early}].\)
    c. I stayed on as CEO \([_{PP} \text{ for four years}].\)
    d. They will absorb enough correct information \([_{VP} \text{ to pass the test}].\)
    e. Joseph had spoken to me in English \([_{S} \text{ when the party started}].\)
Diverse categories for modifiers: sample tree

(46)

```
S
  NP: SUBJ
    Det A N
      The little cat
  VP: PRED
    V  NP: OBJ
      devoured a mouse
  NP: MOD
    last night
```
Semantic roles

- **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.
  
  (47) a. *The boy* ate a sandwich.  
  b. *He* hit the ball.  
  c. *Ruby* hammered the spike.

- **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.
  
  (48) a. *He* hit *the ball*.  
  b. *Ruby* hammered *the spike*. 

Experiencer: A participant who is characterized as aware of something. Examples: subject of perception verbs like feel, smell, hear, see, etc.

(49) a. He felt comfortable in Washington.
    b. She heard a distant bell.

Theme: A participant 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.

(50) a. They gave a flashlight to my younger brother.
    b. He died last month.
Semantic roles (cont’d)

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

  (51) a. He made a cake for *me*.
  
  b. John bought a guitar for *me*.

- **Source:** The one from which motion proceeds. Examples: object of *deprive, fell off, free, cure*, etc.

  (52) a. Grant fell off *the wagon*.
  
  b. We bought the house from *her parents*.
  
  c. The government deprived *the public* of essential information.
Semantic roles (cont’d)

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

  (53) a. Moon receives the award this week.
  b. He moved his family to his boyhood home.

- 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.

  (54) a. They had been allowed to keep their personal effects.
  b. Extracted cores were placed in a CT scanner.
Semantic roles (cont’d)

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

(55) a. He wiped his mouth with *the back of his hand*.  
    b. Tiger can hit a ball with *a stick*.
Advantages of having semantic roles

An important advantage of having such semantic roles available to us is that they allow us to capture the relationship between two related sentences.

(56) a. $\text{agt \ The cat} \ chased \ \text{pat \ the mouse}.$
    b. $\text{pat \ The mouse} \ was \ chased \ by \ \text{agt \ the cat}.$
Advantages of having semantic roles (cont’d)

- The semantic roles also allow us to classify verbs into more fine-grained groups.

(57) a. There comes a time when you have to say to yourself enough is enough.
    b. There remains a gap between ‘what is’ and ‘what should be’.
    c. There lived a lion whose skin could not be pierced by any weapon.
    d. There arrived a tall, red-haired and incredibly well dressed man.

(58) a. *There sang a man with a pipe.
    b. *There dances a man with an umbrella.
    c. *There cried a child asking more candies.

- These examples show that there-constructions are not compatible with a verb whose subject carries an agent semantic role.
There is no agreement about exactly which and how many semantic roles are needed.

(59) a. The exhibit resembles a video game.
    b. The composition of the planet Venus is similar to that of Earth.

There are also cases where we might not be able to pin down the exact semantic role.

(60) a. Henry ran into the house to find a bag of water.
    b. The baby tilted her head up to look at the sky.
The grammatical functions that we have discussed include subject, (direct and indirect) object, predicative complement, oblique complement, and modifier.

The chapter explored diagnostics used to identify each of these grammatical functions in a sentence.

We noted that a key to understanding the syntax of English is the recognition that the mapping between form (categorial type) and function is not one-to-one; mismatches, as when a clause or even a PP serves as a subject, are possible.
We also saw that the semantic role of each constituent in a sentence, taken collectively, tells us ‘who is doing what to whom’.

Furthermore, we saw that although there are instances in which it is difficult to diagnose an argument’s semantic role, semantic roles can be of use in classifying verbs into distinct subclasses.