Categories

- Pretend the italicized nonsense words in the following sentences are real words of English.
- Identify the form class of each one, and state the morphosyntactic properties of each that lead you to assign it to a particular category.

(Van Valin, Robert D. An introduction to syntax. Cambridge University Press, 2001.)

Syntactic Categories

A child found a puppy.
A police officer found a puppy.
Your neighbor found a puppy.
This yellow cat found a puppy.

- It is possible to substitute the child by ‘similar’ expressions

Noun phrase (NP)
- Subject, Object (function)
- Often contains a determiner
- Proper names, pronouns, nouns without a determiner, a clause, sentence
John found a puppy.
He found a puppy.
Boys love puppies.
The puppy loved him.
The puppy loved John.

- **Complex NPs**
The girl that Professor Snape loved married the man of her dreams.

**Prepositional Phrase (P + NP)**
- **Verb Phrase**
  - Verb 'maybe' plus
    - Noun Phrase
    - Prepositional Phrase

“The child __________.”
(a) saw a clown
(b) a bird
(c) slept
(d) smart
(e) ate the cake
(f) found the cake in the cupboard
(g) realized that the earth was round
(p. 128)

(a), (c), (e), (f), and (g) ➔ grammatical sentences
(b) or (d) ➔ ungrammatical sentence
➔ (a), (c), (e), (f), and (g) are verb phrases (VPs)
Syntactic Categories

- Lexical and functional categories
  - Lexical categories

Noun (N): puppy, boy, soup, happiness, fork, kiss, pillow, cake, cupboard
Verb (V): find, run, sleep, throw, realize, see, try, want, believe
Preposition (P): up, down, across, into, from, by, with
Adjective (Adj): red, big, candid, hopeless, fair, idiotic, lucky
Adverb (Adv): again, carefully, luckily, never, very, fairly

Exercises
(Fundamentals of English Syntax (Version 3) Andrew McIntyre)

A. Apply tests to show that the underlined phrases are constituents.
   a. A lady in a blue dress sang the national anthem in the stadium some time after noon.
   b. Someone saw a suspicious-looking man with a briefcase walking around in the foyer on Monday half an hour before the building blew up.

Syntactic Categories

- Lexical and functional categories
  - Functional categories

Determiner (Det): a, the also demonstratives this, that, these, those also quantifiers each, every
Auxiliary (Aux): have, had, be, was, were and modals may, might, can, could, must, shall, ...

Why do we call them functional categories?
Syntactic Categories

- Why do we call them functional categories?

  - Compare
    - A man versus the man
    - This man versus that man
    - Peter is dancing versus Peter has danced.
    - Peter may dance versus Peter must dance.

Phrase Structure Trees and Rules

- Phrase structure trees → speaker’s syntactic knowledge
  - Linear order
  - Identification of syntactic categories
  - Hierarchical structure (syntactic categories)
  - Rules to describe a structure (‘little’ grammar)
    - S → NP VP
    - NP → Det N
    - VP → V NP

- Tree structure → speaker’s intuitions about grouping words
  - Higher node dominates all categories beneath it
  - Immediately dominate → categories one level below
  - Categories that are immediately dominated by the same nodes are sisters
Phrase Structure Trees and Rules

- Tree structure -> speaker’s intuitions about grouping words
  - Higher node **dominates** all categories beneath it
  - **Immediately dominate** -> categories one level below
  - Categories that are immediately dominated by the same nodes are **sisters**

```
S
/   |
NP  VP
/   |
Det N V N
```

Building trees (subtrees)

1. $S \rightarrow NP \ VP$

```
S
/  |
NP VP
```

2. $NP \rightarrow Det \ N$

```
NP
/  |
Det N
```

3. $VP \rightarrow V \ NP$

```
VP
/   |
V NP
```

But our ‘little’ Grammar does not account for sentences like:

The man laughed.
The woman danced.
The horse vomit.

```
S
/  |
NP VP
```

But our ‘little’ Grammar does not account for sentences like:

The man laughed.
The woman danced.
The horse vomit.

```
S
/  |
NP VP
```
But our ‘little’ Grammar does not account for sentences like:

The puppy played in the garden.
The boat sailed up the river.
A girl laughed at the monkey.
The sheepdog rolled in the mud.

5. VP \(\rightarrow\) V PP
6. PP \(\rightarrow\) P NP

Embedded sentences

I don’t know whether I should talk about this.
The teacher asked if the students understood the syntax lesson.

PS rules of our ‘little’ grammar

1. S \(\rightarrow\) NP VP
2. NP \(\rightarrow\) Det N
3. VP \(\rightarrow\) V NP
4. VP \(\rightarrow\) V
5. VP \(\rightarrow\) V PP
6. PP \(\rightarrow\) P NP
7. VP \(\rightarrow\) V CP
8. CP \(\rightarrow\) C S
Phrase Structure Trees and Rules

- How to build trees (conventions)

Recursive rules – the infinity of language

- It is not possible to define each legal structure
- Recursive rule
  - Multiple prepositional phrases
    - [The girl walked [down the street] [over the hill] through the woods] . . .

Revising Rule 5

5. VP → VP PP
Recursive rules – the infinity of language

Complex NPs
the man with the telescope in a box.

9. NP ➔ NP PP

Now we can account for more 'complex' structures:
The children hope that the teacher knows that the principal said that the school closes for the day.

The kindhearted, intelligent, handsome boy had many girlfriends.

NP ➔ Adj NP

BUT there is something wrong

The kindhearted, intelligent, handsome boy had many girlfriends.

NP ➔ Adj NP
The kindhearted, intelligent, handsome boy had many girlfriends.

Possessive noun (Det → NP poss)
This rule forms a recursive set with the NP → Det N’ rule.

Heads an Complements

Relationship among elements in a sentence
- Structural definition of e.g., subject and direct object

Relationship between head of a phrase and its sisters
- N in NP
- V in VP
- ...

Sister categories are complements
- VP find a puppy refers to an event of finding
- NP object in the VP that completes its meaning → complement
- I thought that the child found the puppy → complement (CP that..) is a complement

Sisterhood relations → adjective handsome is sister to the noun boy
Handsome modifies boy modifies
DET is sister to the N’ handsome boy
→ revision of the NP rule → new structure
Not all NPs have adjectives → second N’ rule in which N’ dominates only N

N → Det N’ [revised version of NP → Det N]
N’ → Adj N’
N’ → N

NPs can consist of pronouns, proper names

NP → N’
The order of a head and its complements can differ in different languages (a parameter \( \rightarrow \) Universal Grammar)

<table>
<thead>
<tr>
<th>English</th>
<th>Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>[o read the book]</td>
<td>[o hon-o yonda]</td>
</tr>
<tr>
<td>book-ACC read</td>
<td></td>
</tr>
<tr>
<td>[o picture of John]</td>
<td>[o John-no syasin]</td>
</tr>
<tr>
<td>John-of picture</td>
<td></td>
</tr>
<tr>
<td>[o with John]</td>
<td>[o John-to]</td>
</tr>
<tr>
<td>John-with</td>
<td></td>
</tr>
</tbody>
</table>

*From O’Grady (1997)*

-verb \( \rightarrow \) complement or not?
-Properties of the verb (subcategorization C-selection)
-intransitive verbs, transitive verbs, ditransitive verbs, verbs with sentence complements …

Peter found the book.
*Peter found.
*Peter found in the kitchen.
Heiner slept.
*Heiner slept the book.
Peter gave the book to Mary.
Klaus put the book in his pocket.
Klaus put the book.
Klaus put in his pocket.
Peter think,…

- Noun and complements
- the belief in freedom of speech
- the belief that freedom of speech is a basic right
- their sympathy for the victims
- *their sympathy that the victims are so poor

- Adjectives and complements
- Tired of stale sandwiches
- proud of her children

Verb \( \rightarrow \) lexical entry certain \( \rightarrow \) intrinsic semantic properties (semantic selection (S-selection))

Semantic anomaly
The rock murdered the man.
The beer dtrak the student.
The tree liked the boy.

Well-formedness
Phrase conforms \( \rightarrow \) structural constrain of the language (PS-rules)
Selection requirements of the head (S-selection & C-selection)
Heads, heads, heads but the sentence??

Peter will kick the ball.
Peter has kicked the ball.
Peter is kicking the ball.
Peter may kick the ball.

- What does the auxiliary do?

What does the auxiliary do?

- VP is the complement of Aux

The boy is dancing.
The girls has eaten.
The child must sleep.
The boy may eat.

X-bar (Principle of Universal Grammar)

- Order of heads and complements
  - Head final
  - Head initial
- Head-direction parameter
- X-bar schema
  - XP -> Spec X’
  - X’ -> (YP) X⁰ (YP)

X-String

A theory of the phrase structure

- Principles
  - A phrase always contains a head of the same type
    - i.e. NPs Ns, VP Vs etc.
  - XP -> specifier X’
    - XP consists of a head that is a single bar, a specifier position, and a possible adjunct
  - X’ -> X complement
    - A single-bar category contains a head with no bars and a possible complement
  - X’ -> X’ adjunct
    - A single-bar category can also contain a further single-bar and an adjunct ("a nice blue ball")
- Lexical categories: N (Noun), V (Verb), A (Adjective), P (Preposition)
The woman saw the man with the telescope.

- Two interpretations are possible
  - Rules of syntax → different structures
  - Draw the trees—which PS rules are important?
More phrase structure rules

- E.g., adverbs

```
S
   NP
  The dog
Adv    VP
      destroyed the house
```

```
S
  Adv
  completely

S
  Adv
  probably

S
  NP
  the dog

S
  VP
  has fleas
```

More structure

Sentence Relatedness

- Aspect of syntactic competence
  - Certain sentences are related
  - The boy is sleeping. versus Is the boy sleeping?

- Declarative sentence ➞ asserts a situation
  - Yes-no question ➞ asks for confirmation

- Meaning difference ➞ word order
  - structural difference that corresponds in a systematic way to a meaning difference
  - How does grammar account for this?
“Phrase structure rules account for much of our syntactic knowledge, but they do not account for the fact that certain sentence types in the language relate systematically to other sentence types.” (p.155)

A related sentence is generated from a common underlying structure

The teacher is eating. ➔ Is the teacher eating?
The teacher has slept. ➔ Has the teacher slept?
The teacher can snore. ➔ Can the teacher snore?

Move Aux: Move the Aux -dominated by the root S- and adjoin it to (the root) S

Phrase structure rules ➔ basic structure
Movement ➔ derived structure
More examples

- **Active-passive**
  The man **eat** the cake. ➔ The cake was **eaten by** the man.

- **PP preposing**
  The woman killed her husband with a gun. ➔ With a gun, the woman killed her husband.

**Structural dependency of rules**

The _guys_ (guy) we met at the party next door that lasted until 3 a.m. and was finally broken up by the cops who were called by the neighbors **seem** (seems) kind of cute.

\[
\text{S} \quad \text{NP} \quad \text{VP} \\
\text{Aux} \quad \text{present} \quad \text{3rd person singular} \\
\text{seems} \quad \text{kind of cute} \\
\text{The guy} \quad = \quad = \quad = \\
\]

Structural dependency of rules

- **The boy who is sleeping was dreaming.**
- **Was the boy who is sleeping dreaming?**
- ***Is the boy who sleeping was dreaming?**

- **The boy who can sleep will dream.**
- **Will the boy who can sleep dream?**
- ***Can the boy who sleep will dream?**
A. Apply tests to show that the underlined phrases are constituents.

a. A lady in a blue dress sang the national anthem in the stadium some time after noon.

b. Someone saw a suspicious-looking man with a briefcase walking around in the foyer on Monday half an hour before the building blew up.

B. Identify the categories coordinated by the fractional conjunctions in the sentences below.

a. A cleaner and a professor of physics recently got married.

b. She will sing and play a Beatles tune.

c. He went to the restaurant for a pie and chips but only had a glass of wine there.

d. There was an interesting talk on the last day of the conference, but everyone fell asleep.

C. Find the heads of the phrases below. Is the phrase a NP, AP, VP, AdvP or PP?

- that big and ugly building
- in the house over there
- extremely proud of his children
- smokes very weird cigarettes
- sometimes sings out of tune
- outside the house over there
- seldom knows all the answers
- completely unknown to us

D. Identify the NP and VP which combine to form the following sentences.

- The lady over there and her friend know George.
- Fred obviously believes the story about the Martian invasion.
- A big problem with the theory still gives the researchers cause for concern.
- He usually read or watched television.
Exercises (Fundamentals of English Syntax (Version 3) Andrew McIntyre)

F. Draw trees for the NPs below. Use triangle notation (see footnote 6) for all PPs and APs.

a. a French painter of abstract landscapes
b. the man in the grey suit near the bar
c. a big, old car in the street
d. Mary’s hatted of plastic spoons
e. my friend’s wife’s car
f. a friend of my wife’s car
g. John and Mary’s brother

[draw two trees for g., one for each meaning]

Exercises (Fundamentals of English Syntax (Version 3) Andrew McIntyre)

G. Determine the complements and modifiers of the italised verbs in the following sentences.

a. He left his keys in his pocket.
   c. He left his keys in Berlin in 1973.
   d. James passed the sugar to Ann.
   e. James passed Ann at the corner.
   f. Fred got a parking ticket in front of the shop.
   g. Fred got the key into the lock.
   h. They decided that Gertrude was unreliable.
   i. Egbert talked about everyone’s dissatisfaction with the politicians.
   j. [draw trees for all NPs, PPs, AdvPs and APs]
   k. She often watched videos in the evenings.
   l. He gave flowers to Mary yesterday.
   m. She sent the letter yesterday.
   n. She sent John a book yesterday.
   o. She went to the pub every night.
   p. She woke early the next morning.
   q. They called her a genius.
   r. They asked a doctor the next day.

Exercises (Fundamentals of English Syntax (Version 3) Andrew McIntyre)

I. In the following sentences, find each instance of the category given in brackets after the sentence. Be careful when deciding where each phrase begins and ends.

a. He drove his brother’s wife’s car from the top of the hill to the beach. (NP)
b. Mary’s brother and John are doing a course on the history of the Roman Empire. (NP)
c. At the next meeting, the president of the committee called in an expert on environmental pollution and global warming from America. (NP)
d. The person over there and John’s brother are professional suntan lotion testers. (NP)
e. Fanou’s idea of a luxurious Sunday afternoon is to have a very hot bath while consuming inordinately large amounts of affordable cheap French champagne or reading some articles relevant to her work for the next week. (AP)
f. It’s not so very surprising that he’s quitting his job, considering that that large an amount of boring and difficult work gets assigned to him on an almost daily basis. (AP)
g. Rover walked out of the house, down the driveway and onto the street. (PP)
h. The ball hit me right on the nose. (PP)
i. The man at the door’s car is on the road, just near the entrance to our house. (PP)
j. Put the chair between the cupboard and the lamp or near the window. (PP)

Exercises (Fundamentals of English Syntax (Version 3) Andrew McIntyre)

J. The sentences below show syntactic ambiguity. They could be analysed as having two different structures which each has a different meaning. Use your knowledge of syntax to resolve the ambiguity. Answers to the first two questions are given as an example. (It is only necessary to indicate the structure and categories which are relevant to the resolution of the ambiguity.)

a. Old men and women were sitting in the park.
   Answer: Reading (1): old modifies men and women; [s old [s man and women]]
   Reading (2): old modifies men but not women: [s [s old man] and [new women]]

b. John gave her the flowers in the kitchen.
   Answer: The PP might modify either give or flowers. The structures:
   gave [to her] [s the flowers in the kitchen]
   [gave her the flowers] in the kitchen]
   e. He bought her books.
   f. She has read many books on political affairs in recent years.
   g. She watched the man with the telescope.
   h. There was nothing I wanted to watch on television - only bad movies and documentaries.
   i. She said that she liked him at the party.