L95: Introduction to Natural Language Syntax and Parsing
Lecture 4

Simone Teufel

Department of Computer Science and Technology
University of Cambridge

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Organisational

- Submit Assignment 2 on Monday 12 noon
- Today: Feedback Assignment 1
- Today: Questions about Assignment 2
- You read 5.7 and 5.8 for today
- Chapter 12 J&M strongly advised – 12.3.3 in particular
- For next time: Read section 6 (semantics)
- Still on backburner: logic worksheet; Exercises 1-3 in 5.9
- Today: Assignment 3 (Phrase structure analysis of sentences)

Assignment 1: Feedback

- Some personal feedback
  - Underline means something was wrong
- Mainly – group-wise feedback on common problems

Finite vs. non-finite verbs

- Past Participle vs. Finite past
  - Letters delivered
  - The only rabbit I ever liked was eaten by my parents
- Infinitive vs. non-3-sg-present
  - hurricanes occur infrequently but cause devastation
- Modal verbs are MD

Multi-word units: complex conjunctions

- as well as
- about the same
- Glue together only if there is no alternative

Relative pronouns, vs. WH-pronouns

- who, that etc in relative clause: WDT
- WH-phrase in subordinate WH-clause: WP

Subordinating vs. Coordinating conjunction

- Subordinating conjunction (together with preposition): IN
- Coordinating conjunction: CC

Demonstrative pronoun

- *That is not OK.*
- Guidelines say to treat like demonstrative **determiner**
- DT
- similar case: *both*

It in non-pronominal contexts

- *It lay on the floor.*
- *It rained.*
- *It was her who first noticed it.*
- Semantically not all of these are pronouns (which ones aren't?)
- But guidelines tell us tag them all as pronouns

Use vs mention; existential there

- Mentions can be NN
- Existential *there* is EX

Everything needs to be tagged

- Even if inconvenient, eg. foreign language, lexical examples, citations, punctuation

Adjectives/adverbs

- best suited
- bad tempered
- Don't forget about superlatives and comparatives

Gerunds and Participles as Adjectives

- breaking point
- human annotators
- simplified version
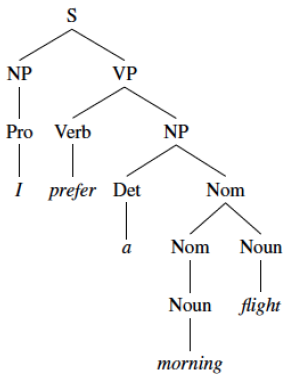- observed words
- tagging manuals

Noun Phrases

- Head: Noun (or Proper noun or pronoun)
- Optional Premodification:
    - Adjectival (Phrase)
    - Compound nouns
    - Possessive NP (with possessive marker "'s")
- Specification
    - Necessary for some forms
    - Result: NP
- Optional Postmodification:
    - Relative clauses
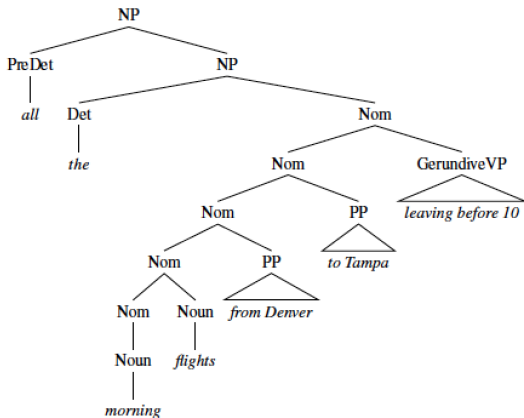   - Prepositional Phrases
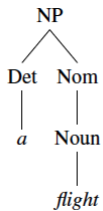
From J and M, chapter 12.3.3
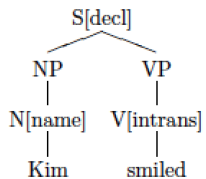
From J and M, chapter 12.3.3

Types of Clauses

- subordinate clauses [finite, -ing, infinitive]
  - I can't believe that he tweeted that
  - I don't like fishing in polluted rivers
  - I made him do the dishes
- WH-clauses
  - I asked who was at the party
- relative clauses[object/subject, reduced non-restrictive/restrictive]
  - the man who she filmed
  - the man who filmed her
  - the paper presented here
  - the Iranian runners who reached the goal within 2 hours were tired
  - the Iranian runners, who reached the goal within 2 hours, were tired

Intransitive verb

a Kim smiled

```
              S[decl]
             /       \
           NP         VP
           |          |
        N[name]   V[intrans]
           |          |
          Kim       smiled
```
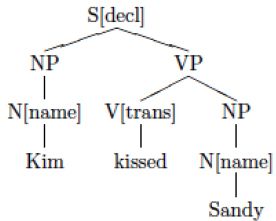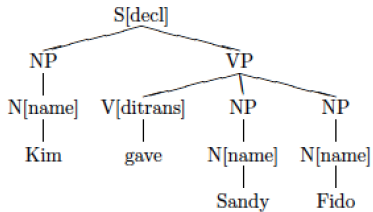
Transitive verb

b Kim kissed Sandy

Ditransitive verb 1

c Kim gave Sandy Fido

Ditransitive verb 2

d Kim gave Fido to Sandy

```
                        S[decl]
              ┌────────────┴────────────┐
             NP                         VP
              │              ┌───────────┼───────────┐
          N[name]       V[ditrans]      NP           PP
              │              │           │         ┌──┴──┐
            Kim            gave       N[name]       P     NP
                                         │          │     │
                                       Fido        to   Sandy
```
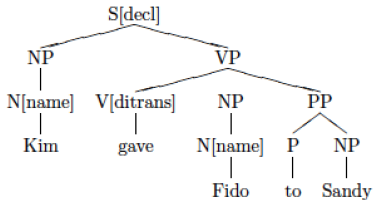
Subject Control verb

e Kim wanted to smile

```
                 S[decl]
          ┌────────┴────────┐
         NP                 VP
          │          ┌──────┴──────┐
      N[name]    V[infin]          VP
          │          │       ┌─────┴─────┐
        Kim       wanted    Aux          VP
                             │           2 2
                             to      V[intrans]
                                         │
                                       smile
```
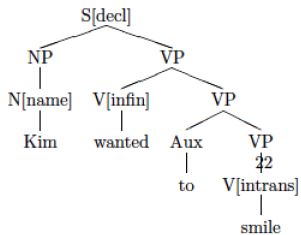
Control vs. Raising Verbs

- Control: Subject or object is semantically an argument of the verb
  - Kim tried to enjoy the party [subject control]
  - Kim persuaded Lee to go to Paris [object control]
- Raising: Subject or object is semantically not an argument of the verb
  - Kim seemed to enjoy the party. [subject raising]
  - Kim expects Lee to have gone to Paris. [object raising]

Assignment 3

- Perform a phrase structure analysis of all chosen sentences
- Reuse your Tokenisation, POS analysis, NP analysis from assignments 1 and 2
- Draw a Phrase Structure tree for each sentence
- Submit by Monday November 4

Exercise 5.9.2

- Why is it S → NP VP?
- Why not S → (NP V) NP
- Why not S → NP V NP
- Build a distributional argument using these sentences:
  - Passionately Kim kissed Sandy
  - Kim passionately kissed Sandy
  - Kim kissed Sandy passionately
  - *Kim kissed passionately Sandy
  - Kim kissed Sandy and Robin did so too
  - A: Who kissed Sandy? B: Kim did.
  - Kiss Sandy!